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ABSTRACT

Project SEIC (State Educational Information Center) was funded to increase the demand for and use of educational information, especially ERIC (Educational Resources Information Center) information, and to make more cost effective delivery of information services. To accomplish these goals Project SEIC first assessed the state-of-the-art of computer technology, validating that software packages capable of meeting Project needs existed. The appropriate packages were installed at a computer facility, while governance, privacy, and confidentiality issues were being resolved. The Project also focused on defining the problems in information dissemination and utilization, and on the relationship between these functions and the diffusion of innovations. Systems and management insights were applied to supplement the understanding of the diffusion process originally observed by psychologists and sociologists. The Project itself was cast into a framework of planned change. A systematic program of dissemination/diffusion was developed known as RSVP (Responsive Services for a Variety of Practitioners). This first volume of the three volume report relates the story of the SEIC Project: its goals, how they were accomplished, and conclusions and recommendations. (JY)

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Vol. I

IR

Massachusetts State Educational Information Center (SEIC)
Final Report
Submitted by
MASSACHUSETTS DEPARTMENT OF EDUCATION

FEBRUARY 1975

This project was conducted under a contract from the National Institute of Education by the Massachusetts Department of Education with the Assistance of The MITRE Corporation and the Institute for Educational Services.

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IR 002 100

Vol. I

Massachusetts State Educational Information Center (SEIC)
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FEBRUARY 1975

The Project SEIC Teams

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ABSTRACT

Project SEIC (State Educational Information Center) was funded by the National Institute for Education for three major purposes:

1. to increase the demand for educational information, especially ERIC (Educational Resources Information Center) information,
2. to increase the use of educational information, particularly in decision making, and
3. to make more cost effective the delivery of information services.

To accomplish these goals the Project SEIC developmental team first assessed the state-of-the-art in computer technology, validating that software packages capable of meeting Project needs existed. This resulted in selecting the appropriate packages for installation at a "neutral" facility, i.e., the MITRE computer facility, and in achieving a prototype operational system during the first year of the developmental effort while governance, privacy, and confidentiality issues were being resolved. Concurrently, the Project focused on defining the problems in information dissemination and utilization, and on the relationship between these functions and the diffusion of innovations.

Two major design considerations were applied in accomplishing these goals. First, systems and management insights were applied to supplement the basic understanding of the diffusion process originally observed by psychologists and sociologists. Second, the Project itself was cast into a framework of planned change. This approach and these insights enabled the conception of improved dissemination and diffusion services. The computer then was used to lower the cost of delivering services as well as to

provide the governance and linking agencies with fine-grained community and target-group profile data. This, in turn, stimulated greater understanding of needs and led to more systematic management of a more coherent dissemination/diffusion process known as RSVP — Responsive Services for a Variety of Practitioners.

A feature of RSVP is that it assists first-generation information users more easily access responsive low-cost information which they both define and evaluate and, during later stages, helps them introduce and implement the innovation identified on the basis of more informed judgment. Significant progress has been made over the past three years in the conceptualization, development, and implementation of this information dissemination and innovation diffusion process, which should serve as a national model.

Specific activities carried out under the contract include:

1. differentiating the roles among the governance agency, the service network, and the users;
2. evaluating existing ERIC computer system options and selecting one for adaptation to the MITRE computer;
3. developing an information dissemination and innovation diffusion process within the framework of a planned change strategy;
4. providing a variety of operational services for the whole educational community;
5. developing and implementing strategies to ensure self-sustaining information service operations;
6. implementing strategies to ensure continuous enrichment and evaluation of the service; and
7. building a sound basis for future developmental efforts focusing on a shared governance approach to delivering multipurpose information services for the Massachusetts State Department of Education, its regional offices, and local districts.

Volume I of this report is a stand-alone document which relates the story of the SEIC Project: its goals, how they were accomplished, and the conclusions and recommendations. Volume II details and amplifies the material in Volume I. Volume III contains the analysis of the statewide practitioner evaluation of comprehensive information services including RSVP and SID (Searches-in-Depth).

Volume II is available only from Massachusetts Department of Education

ACKNOWLEDGMENTS

The complex and politically sensitive nature of the activities associated with establishing a State Educational Information Center (SEIC) have necessitated the collaborative efforts of a number of individuals and organizations at the federal, state, and local levels.

Within the National Institute of Education (NIE), the guidance and support of Charles Haughey, Office of Dissemination and Resources, John Coulson, SEIC project monitor for NIE, and Lee G. Burchinal,* head of the Dissemination Task Force, have been crucial in shaping the multiple goals of Project SEIC. Relatedly, the earlier interest of Thomas Burns, Deputy Associate Commissioner, Bureau of Elementary and Secondary Education, led to a Massachusetts-based pilot project which culminated in the creation of a new organizational form, the Institute for Educational Services, Inc. (IES), established to increase the substance and accelerate the pace of planned change in education. This organization has been instrumental in assisting the state deliver and manage the information services that have evolved under Project SEIC.

Those within the Massachusetts Department of Education who have responded as the project efforts required include Kay Hood and Elizabeth Edelglass from the Bureau of Educational Information Services; Geraldine Mercadente, Consultant to the Office of Executive Planning; and Michael

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* Presently Head of the Office of Science Information Services, National Science Foundation.

Consiglio, Supervisor, and Joanne Perry, Information Specialist, of the Division of Research, Planning and Evaluation. Special thanks go to Stephen Kaagan, Executive Planner, and Robert Watson, Director of the Bureau of Curriculum Services, who not only contributed to the proposal but facilitated the creation and evolution of IES. The staffs of the Regional Educational Centers are also acknowledged for their contributions to and participation in the project.

In the last stage of this Project a number of insights were also acquired through discussions with the Associate Commissioner, Division of Special Education, Robert H. Audette. These insights should enable the Massachusetts Department of Education to build toward more valuable regionally delivered information services which satisfy the needs of teachers and administrators dealing with children with special needs. However, the generalized design approach envisioned should also enable the delivery of services to various educational users within state, regional, and local agencies.

Because of the initial hand-in-glove funding of Project SEIC and a related information dissemination project (Project LINKER), close coordination was necessary to ensure the compatibility of both efforts. The advice and assistance provided by Richard J. Lavin, Director, Merrimack Education Center, INC., (MEC), facilitated the resolution of the many complex issues and considerations.

Other collaboratives, organizations, and individuals are acknowledged for contributions to the development of the RSVP service (Responsive Services for a Variety of Practitioners). Those who contributed to the Open Education portion include Daniel Poor and Ann Banks of the Common Concern Collaborative; Joan Little, Billie Brey, and Irma Napoleon of the Early Childhood Center; Edward Yeomans, Greater Boston Teachers Center;

Cynthia Cole, Lesley College; Norellen Stokely, Education Development Center; and Marcia Garman, San Mateo Educational Resources Center.

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The late George King, Assistant Superintendent, Framingham Public Schools, David Crandall and Joyce Bowden of The Network of Innovative Schools, and the staff members of the Far West Laboratory, the Northwest Laboratory, the Stanford Center for Research and Development in Teaching, the New England Program for Teacher Education, and the Greater Boston Teachers Association are acknowledged for their contributions to the Teacher Effectiveness portion of RSVP.

The interest and contributions of the staff of existing organizations that provide various types of information dissemination services also must be acknowledged, in particular, the San Mateo County Board of Education, California; the South Carolina State Department of Education; the State of North Dakota, Department of Public Instruction; Montgomery County Intermediate Unit, Pennsylvania; the Northern Colorado Educational BOCES (Board of Cooperative Educational Services); and the Utah State Board of Education. Special acknowledgments are given to Frank W. Mattas, Executive Director, San Mateo Educational Resource Center, who provided significant organizational guidance as well as collaborative service support to the project.

Other organizations and groups that contributed to various aspect of the project include:

- Professional and civic groups: the League of Women Voters, Educational Renewal, Inc., the Massachusetts Parent-Teacher Association, the Elementary School Principals Association, the Secondary School Principals Association, the Massachusetts Association of School Administrators, the Massachusetts Association of School Committees, the Massachusetts Teachers Association, the American Federation of Teachers, the Massachusetts Association of School Business Officials, and the Massachusetts Advisory Council on Education.
- Representatives from higher education: the Massachusetts State Colleges, the University of Massachusetts, and private colleges including Boston College, Boston University, Northeastern University, Harvard University, and Lesley College.

Primary responsibility for technical support to the project was delegated to The MITRE Corporation, Bedford, Massachusetts. Within MITRE, administrative guidance was provided by Eugene D. Lundberg, Management Systems Department Head. Computer support, including a shared responsibility for the technical analysis of information retrieval options, was provided by John N. Boolukos and John T. Connolly.

Last but not least the authors acknowledge the significant contribution made by Trudy Bogusz of MITRE's Technical Information Department in editing and preparing this report for publication. While ably assisted by several of her co-workers, special mention is made of Paula Aucoin who carefully typed the several drafts and a significant portion of the final document.

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SECTION 1

INTRODUCTION AND OVERVIEW

THE DISSEMINATION OF INFORMATION AND THE DIFFUSION OF INNOVATIONS: A CONTEXT FOR DESIGNING PROJECT SEIC

The goals set by the National Institute of Education (NIE) for Project SEIC (State Educational Information Center) and its national counterparts required the consideration, examination, and evaluation of numerous complex variables in order to design a study that would produce pragmatic and implementable results. In essence, these goals were as follows:

- increase the demand for educational information, especially that contained in the already vast and constantly growing knowledge banks of ERIC (Educational Resource Information Centers);
- improve the information service-delivery system, including if necessary, the design of computer software packages; and
- improve the utilization of information by the educational practitioner.

Achievement of these goals required the expertise of an interdisciplinary team, knowledgeable not only in the area of computer-based information systems but in areas such as the management of complex systems and the planned change process. In translating these broad goals into manageable objectives for an innovative project, the Massachusetts Department of Education (MDE) asked assistance from The MITRE Corporation, a not-for-profit organization which had, for several years, served as a technical consultant to the Department on other projects. In essence, the following objectives* guided activities carried out during the life of the project:

1. identify balanced, differentiated roles among the governance agency, the service network, and the users (see Section 2);
2. evaluate alternative existing ERIC computer system options and select one for adaptation to the MITRE computer (see Section 3);
3. develop an information dissemination and innovation diffusion process within the framework of a planned change strategy (see Section 4);
   - increase awareness of and interest in educational information among the whole educational community: administrators, teachers, students, parents, and nonparent citizens;
4. provide a variety of operational services for the whole educational community (see Section 5);
   - identify the information requirements and services, and develop products to address the separate needs of the first-generation information user and more sophisticated information users;
   - identify the user and service networks;
   - select a linking agency to act variously as catalyst, resource linker, problem solver, and facilitator throughout the various stages of the process; and
5. develop and implement strategies to ensure self-sustaining information service operations (see Section 6); and
6. implement strategies to ensure continuous enrichment and evaluation of the service (see Section 7).

Preliminary Project activities carried out by the MDE and MITRE followed two main thrusts. One focused on assessing the state-of-the-art in computer technology, a study that validated the expectation that off-the-shelf software packages capable of meeting Project needs existed. This led to a redirection of software design efforts to those necessary to adapt the selected packages for use on the MITRE computer during the pilot-test stage. It also resulted in an operational system before the end of the first year of the Project.

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*A detailed analysis of Project accomplishments is included in Volume II, Section 1.

The other thrust focused on defining the problems of information dissemination and utilization, and on the relationship between these functions and the diffusion of innovations (see Volume II, Section 2).

> *Fact: Earlier studies of the education diffusion tradition disclosed that a considerable "time lag" occurred between the invention and adoption of new educational ideas. Some researchers found evidence to substantiate the fact that, on the average, American schools suffer a lag of 25 years between invention and adoption of the best practices.*[1*]

Many reasons have been advanced to explain this lag, among them the lack of change agents to promote new educational ideas, the lack of incentives to implement innovations that would seriously disturb the bureaucratic structure of the school or redistribute authority within that structure.[2] But at least some of the 25-year lag can be attributed to the information dissemination process itself, a process that has been found to be extremely long and slow.[3] Both the formal and informal communication networks are extremely diffuse, causing a large interval of time to elapse from the start of a piece of research until its integration into the archival body of scientific knowledge.[4] Once integrated, it often is difficult to locate;[5] once located, antiquated procedures often are applied in processing it.[6]

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*Superscripts denote references; see pages 105 to 106.

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Fact: Quite often the linking agent between education R&D and practice is the education publisher. The publishing industry is diverse and highly competitive. There are a few large companies and hundreds of smaller ones, resulting in fragmentation. There are problems of articulation between developers and publishers: the former is not involved in the distribution process and therefore cannot assist effectively in providing teacher training and other support services to the school; the latter becomes involved only when development is complete and therefore cannot help shape the product to make it more marketable.[7]

The publishing industry, motivated by a profit incentive, cannot afford to spend time and dollars on building local problem-solving capacity through the use of better information. Marketing strategies are understandably "producer-push" in nature rather than "consumer-seek". This has heightened the problem of effective resource utilization. Alternative solutions exist but are not disseminated. The most urgent requests are for the synthesizing of available knowledge to meet local needs.[8] Unless people in the schools possess the capacity to identify and generate or examine alternative solutions for their problems, little in the way of beneficial reform will occur.[7]

The Educational Resource Information Center (ERIC) can be viewed as an alternative linkage model for communicating the results of research to the educational practitioner. However, studies of the ERIC system show that improved methods are needed to bring the ERIC knowledge base to the attention of practitioners.[9] According to NIE, new approaches of information communication need to be based on the characteristics of potential users and their communication behaviors and information needs. These approaches should also provide for user feedback to assist in modifying the system.[7]

Fact: Two trends – the technological revolution, which produced the computer and new, e.g., digital, communications systems, plus the knowledge explosion, generated in part by the technological revolution, have created an information overload.

A further complicating factor is the geometric growth of the knowledge base;[10] over 365,000 books alone are published annually.[11] As computers grow in size and power, it becomes increasingly important to expand their data bases with diverse inputs so that in serving a variety of clients economic justification for the investment can be rationalized. Still research findings show little direct use by practitioners of the vast banks of educational knowledge.[12] The data bases are not organized systematically to link solutions to problems; hence, they cannot be cost effectively accessed.

TOWARD A NATIONAL MODEL FOR THE DISSEMINATION OF INFORMATION AND THE DIFFUSION OF SUCCESSFUL PRACTICES

The results of the literature survey, reinforced by the outcomes of interviews with the staffs of three national and several local information centers, validated several percepts regarding the nature of an improved process for the acquisition and dissemination of information, and for the diffusion of innovative practices.

> First, the process must involve the user in identifying his informational needs and, at the same time, reveal insights about the nature of the information user — his characteristics, and his readiness for change.
>
> Second, it must ensure ready access to relevant, selected information at the time and in a format convenient to the user.
>
> Third, the process must enhance the ability of the information users to contribute to the solution of problems.
>
> Fourth, the process must ensure the establishment of linkages between the external research and development system and the educational community, using information to (a) develop a comprehensive statement of needs, (b) structure alternative approaches to a solution, (c) select a solution, and (d) to define and implement a plan for the acquisition and diffusion of the innovation.

Fifth, the process must account for balanced and differentiated roles among the user, the service agency and the governance agency, who are both producers and consumers of information.

Sixth, the process must identify gaps in research and/or the literature and include in its design a mechanism to facilitate the communication of such findings to NIE.

The approach conceived and developed under Project SEIC — RSVP (Responsive Services for a Variety of Practitioners) — takes the form of a multi-stage process, cast within a planned change framework. In essence, RSVP enables management of a process that builds on the findings of psychologists and sociologists. The computer is used to supply information about innovations, about general issues, and about specific questions, and then message data collected from the user's evaluation of the service in order to determine ways of improving it and to find out more about him. It is a process that (1) encourages the identification of information needs by especially the first-generation information user, (2) prepares information packages in response to questions he has asked about a specific issue ("hot" topic) in order to provide him with new insights on the subject, (3) brings him into contact — across publics, school districts and regions — with others concerned about the same issue, (4) when necessary, steps him through a problem-finding/problem-solving effort during which he works with a task force to scope the problem of introducing change, identify alternative solutions and develop a collaborative action plan, (5) provides him with support in implementing the plan, and (6) requires him to document his experience for inclusion in future information packages. From start to finish, the process is supported by a linking agency that serves variously as a resource linker, a solution giver, a catalyst, a facilitator, and an organizer of technical assistance teams with interdisciplinary skills capable of responding to specific user needs.

To date, that portion of the process focusing on the acquisition, dissemination and utilization of information has been developed, pilot-tested, refined and implemented as a self-sustaining service. Budgetary constraints excluded the further development of that portion of the process concerned with the diffusion of innovations. The results of user evaluations indicate strong, positive reactions to the service (see Section 7).

In concept and operation, Project SEIC reflects the guidance contained in the goals of NIE, in the specific objectives identified by the Massachusetts Department of Education, and in the recommendations of leading researchers who have studied the process of change in education, among them, Havelock:

> We need to build national systems which allow any school district to plug into the most sophisticated sources of information in such a way that they get knowledge and materials which are relevant, timely, and truly cost beneficial.[13]

Project SEIC, because it developed some essential building blocks, represents a first step in evolving toward this type of system. Its design accommodates the same types of issues that would have to be considered in evolving toward a Regional Educational Management Information System (REMIS) which could serve as a model to be replicated in building national systems. Illustrations of possible types of information services that could be readily incorporated into an expanded SEIC are suggested (see Section 8), along with some recommended next-steps (see Section 9).

SECTION 2

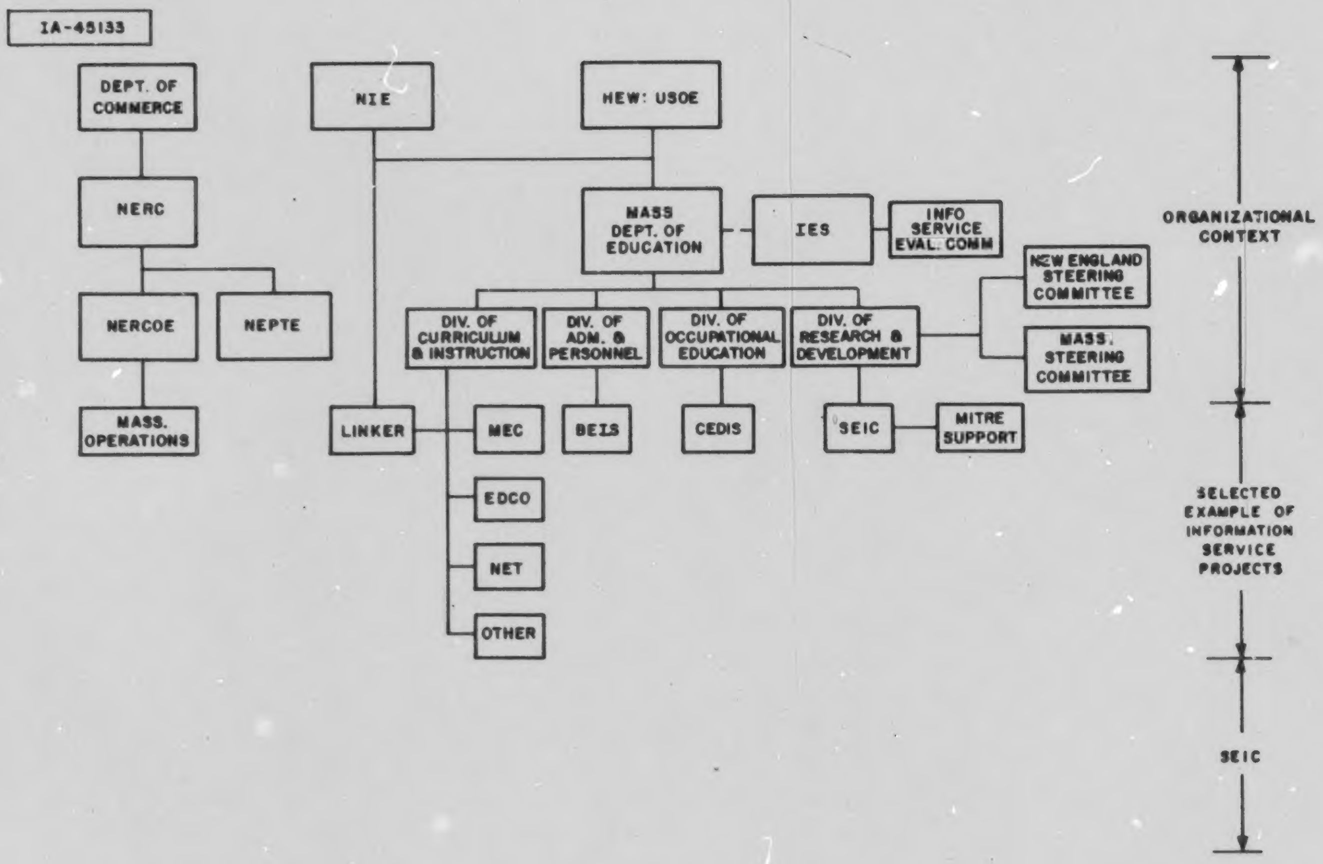
PROJECT ORGANIZATION: DEFINING ROLES AND IMPLEMENTING A VIABLE DEVELOPMENT PLAN IN A COMPLEX ENVIRONMENT

Project SEIC was carried out under an innovative set of organizational arrangements that accommodated the accomplishment of differentiated, balanced roles among (1) the governance agency, the Massachusetts Department of Education (MDE), (2) the service network, composed of the MDE's Bureau of Educational Information Services and Regional Education Centers; the Institute for Educational Services (IES); collaboratives; institutions of higher education, and The MITRE Corporation which provided technical support in designing and developing the Project; and (3) the statewide multiple-public network of opinion leaders and users who, (according to the RSVP concept) would define the information service and evaluate the service network. These organizational arrangements permitted MDE to focus on governance of the Project and enabled IES — the linking agency — to concentrate on the management and delivery of cost-effective services.

The introduction of a linking agency was inspired by the complex political environment in which the Project evolved. At the time of Project SEIC funding, Massachusetts educators already were being provided with a number of options for accessing information. Numerous organizations, some of them based outside of Massachusetts, were offering services either (1) to specific target groups, e.g., regional vocational-technical high schools, clusters of LEAs or (2) on the basis of specific thrusts, e.g., career education, exemplary practices. (In many cases, the user's access to information services was a function of his or her district's organizational affiliation: a teacher or administrator in a regional vocational-technical high school, a staff member at MDE Central Headquarters, district membership in a collaborative, etc.) Thus many organizations had a vested interest in Project SEIC because of their information dissemination activities which were funded through the programs of separate federal agencies — e.g., the U.S. Office of Education (USOE), the Department of Commerce, and the National Institute of Education — and administered at the state level by various organizational units within MDE: the Division of Curriculum and Instruction, the Division of Occupational Education, the Division of Administration and Personnel, etc. (see Figure 1)

This complex environment fostered a fragmented information-service delivery system characterized by redundant, overlapping services. The "territorial rights" problem mitigated against the formation of natural alliances, within and across districts and regions, among information users concerned about the same issues. This activity is an essential design feature of especially the latter stages of RSVP which focus on the diffusion of innovations.

It was apparent that the accomplishment of Project SEIC's goals and objectives depended upon the introduction of a linking agency that would be perceived as nonthreatening to the existing information service-delivery organizations and which would, in fact, enhance their dissemination function by including selective products of their data bases in building need-responsive information packages for a statewide clientele. To do this effectively, the linking agency would organize the user network *first*, and put the client in immediate command of defining his informational needs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MITRE SUPPORT
ORGANIZATIONAL CONTEXT
SELECTED EXAMPLE OF INFORMATION SERVICE PROJECTS
SEIC

Figure 1. Project SEIC: Organizational Perspective

by "hot" topic, thereby identifying the service network for a given "hot" topic. The extent to which the service network satisfied, through the linking agency, the users' informational needs would be evaluated by the user himself. The governance agency would ensure that appropriate improvements were implemented.

Several agencies were considered as candidates for the linking role. The selection* of IES as this agency by representatives of user networks and the endorsement of that decision by representatives of several existing service-delivery agencies was based on several factors. First, in carrying out its mission of accelerating the pace and improving the substance of planned change, IES works with the client in identifying his needs and then encourages him to seek and implement a solution. To facilitate the process, IES searches for alternative solutions and then federates clients across districts and/or across regions to provide cost-effective implementation of the solution they have selected, whether it be materials, in-service training programs, curriculum, etc. This approach is fundamental to IES's operational style which focuses on working with the client *first* rather than initially promoting a solution of any kind, in any form, by convincing the client that he needs it.

Second, there was concern over the maintenance of the service after the planned withdrawal of federal funds. The follow-on funding strategy included partial support from the state to continue (1) selective development and expansion of the service, and (2) diffusion activities in high-need, low-readiness-for-change districts in order to facilitate access to equal educational opportunity. It also allowed for charging the user a fee for the actual information packages delivered. It was concluded that partial financial support from the user would at least sustain the delivery of services function. This strategy also would furnish an incentive to the service agency for continuous improvement of the quality of the service and, at the same time, provide irrefutable evidence of the value of the service to the user. The fact that the state is not chartered to collect a fee for services further influenced the decision to seek an alternative service delivery agency.

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*At the same time the users and service agencies endorsed the recommendation that during the developmental phase of Project SEIC the ERIC data base be housed on the MITRE computer.

The balanced, differentiated roles and responsibilities among the governance agency, the linking agency, and the technical/management support agency are highlighted below (see also Volume II, Section 3).

The Governance Agency: Massachusetts Department of Education (MDE)

The overall project guidance including development and monitoring of Project plan and preparing reports for NIE.

Organize user design labs (see Section 4)

Negotiate with service agencies

Review service fee

Evaluate cost effectiveness of linking agency and other service agencies

The Linking Agency: The Institute for Educational Services (IES)

Manage and operate services for MDE regional and local agencies

Conduct information utilization workshops

Implement strategies to reduce the cost, improve responsiveness and quality of services to regional and local agencies

Implement marketing strategy

Plan for transfer of brokerage role to regional centers

The Technical/Management Support Organization: The MITRE Corporation

Adapt/modify existing computer software

Provide computer services for development pilot-test phase

Conceive, design, develop, and pilot-test innovative services

Conceive and implement strategies for user involvement

Provide technical support to governance agency and linking agency in planning and executing their responsibilities

The identification of balanced, differentiated roles among the above three key organizations and the user and service networks provided a rational basis for developing a Project Management Plan (see Figure 2) which identified by tasks the degree of responsibility each organization undertook in contributing to the development and operation of services.

This organizational arrangement provided a means of implementing the Commissioner of Education's desire for a collaborative approach (see Volume II, Section 3) to effective dissemination and utilization of information in response to user demands and MDE priorities. It enabled MDE to focus on governance, guiding the efforts of the collaborative service network to ensure responsiveness to user needs. It also was a contributing factor in causing the user/practitioner to seek information which he perceived as originating from credible sources and relevant to improving his participation in the decision-making process.

Upon implementation of the Plan, the arrangements demonstrated that the linking agency, IES, could (1) collect a reasonable fee for the service, leading to self-sustaining operations; (2) facilitate the organization and development of a user network, and (3) market the service and products of other service agencies across regions in response to statewide user demands. The technical/management support agency was able to focus on (1) defining

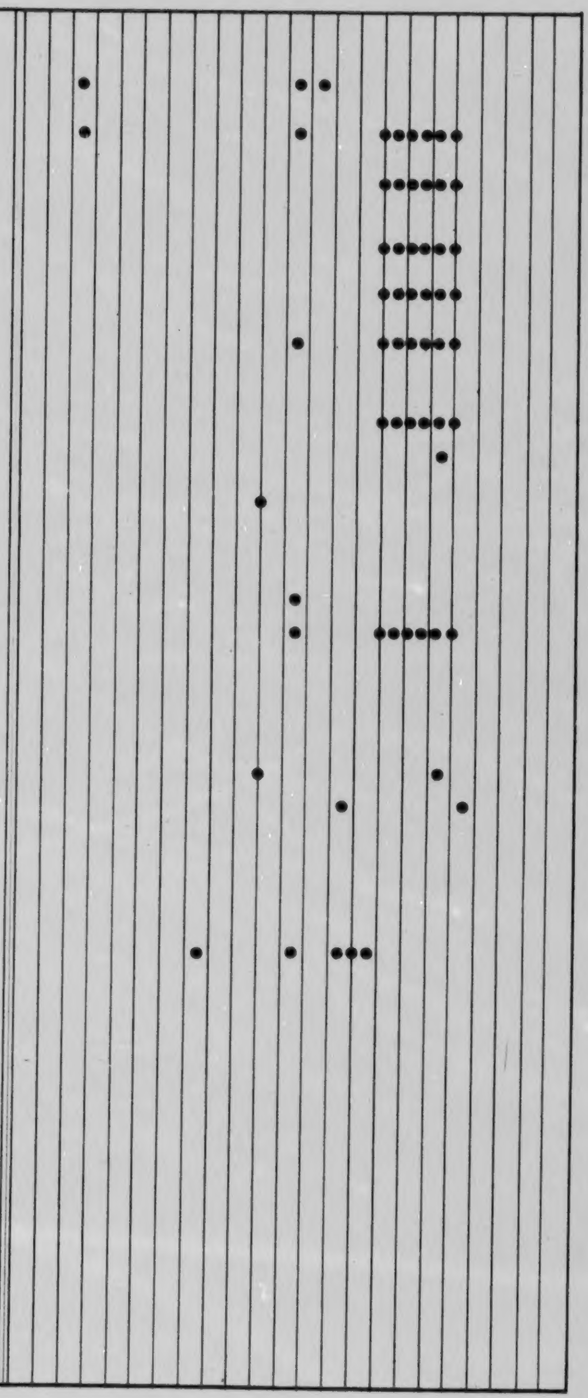
I. Organize SEIC Network	(1)	(2)	(3)									
A. Organize Massachusetts and New England Advisory Council	(1)	(2)	(3)									
B. Conduct Statewide Workshops, etc., Hosted by MDE and Regional Offices	(2)	(1)	(2)								(2)	
1. Orient Users and Service Agencies to ERIC	(1)	(1)	(1)		(1)	(1)	(1)	(1)	(1)	(1)		
2. Identify and Orient Multi-Public Change – Agents by Region; Gatekeepers and Support Personnel	(1)	(1)	(2)	2	(2)	(3)	(1)	(1)	(1)	(1)		(1)
3. Clarify Services and Responsibilities by Region	(1)	(1)	2	2	(2)	3	(1)	(1)	1	(1)		2
4. Introduce "Hot Topics" Concept (see C, 3 below)	(1)	(1)	(2)	2	2	(2)	(2)	(2)	2	2	(1)	
5. Solicit & Synthesize Common Informational Problems Associated with "Hot Topics" (Provides basis for initial construct of Information Packages)	(1)	(1)	2	3	2	(1)	2	2	2	2	(1)	3
C. Analyze User Informational Requirements	(1)	(1)	(2)	3	3	(2)	(3)	3	3	3	(1)	3
1. Conduct Demand Analysis of MEC/ LINKER ERIC Users	(2)	(2)					(2)				(1)	
2. Analyze and Synthesize Massachusetts and Other States' Needs Assessments Studies (Capitalizes on NCEC – Funded Needs Assessment and Planning Studies)	(1)	(2)	2	2	2	2	2	2	2	2	(1)	1
3. Identify "Hot Topics" (Initial)	(1)	(2)									(1)	
D. Evaluate Existing Network Services (Query, Search, etc.) within Massachusetts and Nationally	(1)	(1)	1	2	1	3	3	3	3	3	(2)	(1)
1. Within NEC	(3)						(1)				(2)	
2. Within Massachusetts Educational Agencies	(2)	(1)	(1)	2	(1)					(1)	(2)	(1)
3. Within NERCOE					(2)					(1)		
4. Other States	(1)	(1)									(2)	
a. Colorado/BOCS												
b. California												
c. South Carolina												
d. Pennsylvania												
e. Utah												
f. Oregon												

*1 = Primarily Accountable
2 = Key Responsibilities
3 = Related Responsibilities

Numbers in parentheses refer to responsibilities under current contract.

Figure 2. Project SE

(2)	(2)	(2)	(2)	(2)	2	(1)	(1)	(1)	1	1
2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3
3	3	3	3	3	3	3	3	3	3	3
3	3	3	3	3	3	3	3	3	3	3
3	3	3	3	3	3	3	3	3	3	3
1	(1)	(1)	(1)	(1)	1	(1)	(1)	(1)	1	1
1	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	1	1



Tasks	Interactive SEIC Network Elements and Degrees* of Responsibility											
	MDE: Governance, Developmental and Needs – Responsive Service					Developmental and Needs – Responsive Service Organizations						
Current	Res. & Devel. Division	Admin. & Personnel Division (BEIS)	Regional Offices	Curriculum & Instr. Division (BLEX) (CS)	Occup. Education Division (CEDIS)	IES	MEC	EDCO	Network of Innovative Schools	NERCOE	MITRE	Executive Office of Sec. for Educational Affairs
II. Develop Cost-Effective Service Support Capabilities	(1)	(2)				(2)	(2)	2	2	(2)	(1)	
A. Acquire Initial ERIC Data Base and Software Capability (Query Unmodified)							(1)				(1)	
B. Augment ERIC Data Base and Software Capabilities	(1)										(1)	
1. Identify Alternative Options from Existing Technology	(1)										(1)	
2. Compare and Evaluate Options	(1)										(1)	
3. Acquire and Install RIC and Query II Modified Software Packages (Quick-Fix System)	(1)										(1)	
C. Acquire and Update Multiple Data Bases	(1)										(1)	
1. RIE												
2. CIJE												
3. AIM-ARM												
D. Write New Programs as Necessary	(1)										(1)	
1. Program (ERIC-IN) to Link RIE and QUERY II Packages												
2. Program to Provide Integrated Search of all 3 Data Bases												
E. Perform Trade-off analyses to Significantly Reduce Costs, Time and Increase Relevant to Search Products	(1)	(1)				2	2	2		2	(1)	3
F. Demonstrate Quick-Fix Capabilities to Various Multi-Publics (eng., MEC – Teachers, Principals, Superintendents; MDE – Bureau of Educational Services, Bureau of Library Extension Services, Division of Occupational Education (CEDIS). etc.; IEC: Title I Parents; Massachusetts Association of School Committees: Office of the Secretary of Education; State, Community and Private University; MACE: NERCOE: Massachusetts Council of Public Schools, Inc., League of Women Voters, etc.)	(1)	(1)	(2)		(2)	(2)	(2)				(2)	(3)
G. Analyze and Re-Orient NON-ERIC MDE Data to Improve Responsiveness and Reduce Cost	(1)										(1)	
1. Identify Elements of Data Base	(1)										(2)	
2. Examine Input/Output Flows and Problems	(1)										(1)	
3. Hold LEA Users Workshops to Obtain Their Perspectives On Problems	(1)					(2)	(2)	(2)	2		(1)	
4. Recommend Cost-Reduction and Responsiveness Actions	(1)										(1)	
H. Evolve Improved Management, Service and Network Dissemination Strategies	(1)	(1)				3	2		2	2	(1)	(2)
1. Develop and Test Whole Educational Community Design Lab Concept as a Means of Conceiving Viable Network Arrangements	(1)	(1)									(1)	
2. Design & Develop Information Packages	(1)	(1)				(2)					(1)	
3. Pilot Test Information Packages	(2)	(1)	(2)	2	2	(2)	(2)	(2)	(2)	2	(2)	(2)
4. Evaluate Implications of Massachusetts/National in Reducing Costs, Improving Services	(2)	(1)									(1)	(2)

*1 = Primarily Accountable
2 = Key Responsibilities
3 = Related Responsibilities

Numbers in parentheses refer to responsibilities under current contract.

Figure 2. Project SEIC Pl

Multipublic Responsible for Initiating Informational Requirements, and Using/Evaluating Network Services											Time Frame																						
											1971						1972												Post Contract Period				
Legislators	Mass. Assoc. of School Committees	Mass. Assoc. of School Superintendents	Mass. Assoc. of Secondary School Principals	Mass. Teachers' Assoc.	American Federation of Teachers (Mass. Affil.)	League of Women Voters	Mass. Council of Public Schools	Mass. Advisory Council on Education	Institutions of Higher Education	Advisory Council on Private Schools	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	1973	1974	1975	1976	1977
																												●	●				
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											●													●	●								
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																												●					
(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)																		●		●			
																										●							
																					●												
																								●									
																										●							
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)												●											
																						●											
																						●					●	●					
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)																	●			●			
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)																	●						

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III. Operate Evolving SEIC Network & Delivery Services	(2)	(1)				(2)					(2)	
A. Host Meetings of Massachusetts and New England Advisory Council to Provide Policy Guidance	(2)	(1)	(2)	(2)	(2)							
B. Prepare and Execute Marketing Activities†		(1)	(2)			(2)	(3)					
C. Conduct Continuous Needs Assessment and Demand Analyses†	(3)	(1)	(2)			(2)	(2)	(2)	(2)	(2)	(2)	(3)
D. Coordinate Specialized Training (EIC, etc.) Programs Brokered by Service Agencies	(2)	(1)	(3)				(2)		(2)	(2)		
E. Solicit "Hot Topics" from Multipublics†	(3)	(1)				(1)						(3)
F. Prepare & Disseminate Info. Packages†	(2)	(1)		(2)	(3)	(1)	(3)	(3)	(3)	(3)	(2)	(3)
G. Negotiate Queries; Formulate Logic†	(3)	(1)	(1)		(3)		(2)	2	(2)	(2)	(3)	
H. Prepare and Disseminate Search Products†	(2)	(1)	(2)								(3)	
1. Information Packages Search Products	(2)	(1)	(2)	(2)	(2)	(1)	(2)	(2)	(2)	(2)	(3)	
2. Search-In-Depth Products	(2)	(1)	(2)	(2)	(2)		(2)	(3)	(2)	(2)		
I. Provide Microfiche Hard-Copy Reproductions of Documents Requested†	(3)	(1)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(3)	
J. Operate EPD-Support Services†	(1)	(2)									(2)	
K. Arrange for Conduit of Funds for Network Services (see E through I)	(1)	(1)	(2)									
L. Continue Development and Implementation of Cost-Reduction Techniques and Strategies (see II, preceding page)†	(2)	(1)	(2)			(2)	(2)	(2)	(2)	(2)	(2)	
M. Exchange and Update Fugitive Data Bases from Massachusetts and Other States†	(3)	(1)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)		
N. Continue Acquisition of Insights from and Exchange of Lessons Learned with Existing Information Search and Retrieval Centers†	(2)	(1)				(3)	(2)	(3)	(2)	(2)	(2)	
O. Continue Development of Variable Pricing Strategies†	(3)	(1)	(2)	(3)	(3)	(2)	(3)	(3)	(3)	(3)	(2)	
P. Hire, Orient and Deploy Field Agents to Increase Awareness and Augment Technical Assistance Services†		1	2	3	2		2	3	(3)	(2)		
Q. Evaluate Cost Effectiveness of Evolving Support Capabilities, Including Assessment of Implications for Other Networks†	(2)	(1)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
R. Select and Deploy On-Line Capabilities as User Sophistication and Volume of Demand Warrant‡	1	1	2	2							2	
S. Achieve Self-Sustaining Operations‡		1	2	2	2	2	2	2	2	2	2	3

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† Limited during Current Contract Period

‡ Totally Dependent on Follow-on Funding

*1 = Primarily Accountable
2 = Key Responsibilities
3 = Related Responsibilities

Numbers in parentheses refer to responsibilities under current contract.

Figure 2. Project SEIC P

																										●		●					
																							●		●	●	●	●					
(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	3	3																●	●	●					
																							●			●	●	●					
(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	3	3													●										
(3)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	2	2												●				●	●	●					
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																							●	●		●		●					
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	2	2																							
																												●					
3	3	3	3	3	3	3	3	3	3	3											●			●				●					

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IV. Documentation	(1)	(2)									(2)	
A. Prepare Interim Report	(1)	(2)									(2)	
B. Prepare Progress Report as Required	(1)	(2)									(2)	
C. Disseminate New Concepts	(1)	(1)				(2)	(2)	2	2	2	(2)	(2)
D. Prepare Final Report (Including Final Evolutionary Development Plan)	(1)	(2)									(2)	

*1 = Primarily Accountable
2 = Key Responsibilities
3 = Related Responsibilities

Numbers in parentheses refer to responsibilities under current contract.

Figure 2. Project SEIC

																							●		●			●					
																							●		●								
3	3	3	3	3	3	3	3	3	3	3																		●					
																												●					

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and developing the RSVP process, (2) providing, as required, technical assistance to the governance and linking agencies, (3) supplying computer services for the developmental phase of Project SEIC, and (4) conceiving and evaluating strategies for improving the cost-effective delivery of services.

The state thus was free to (1) focus on governance issues such as maintenance of a reasonable fee for services; (2) assure that unnecessary duplication of service by service agencies would be reduced; (3) assure that high-priority common user information needs were identified and addressed; and (4) react to the user evaluations of the service provided to assure continued responsiveness to shifting user needs and enhance the likelihood of early self-sustaining operations. In essence, MDE fulfilled the appropriate role of a governance agency which is perhaps best described by Peter Drucker:[14]

> The purpose of government is to make fundamental decisions and to make them effectively. The purpose of government is to focus the political energy of society.... The purpose of government is, in other words, to govern. This, as we have learned in other institutions, is incompatible with "doing". Any attempt to combine government with "doing" on a large scale paralyzes the decision-making capacity. Any attempt to make decision-making organizations actually "do" also means very poor "doing". They are not focused on "doing", they are not equipped for it. They are not fundamentally concerned with it.

SECTION 3

INVESTIGATION OF COMPUTER SYSTEM OPTIONS FOR DELIVERING STATEWIDE SERVICES

INTRODUCTION

The SEIC Project, as initially defined,* required that there be available an accessible ERIC search capability. This capability would not only provide an opportunity to assess the problems involved in ERIC search and retrieval, but also problems associated with the dissemination of ERIC computer searches to local school districts. Because of the special needs of the SEIC Project, eight major ERIC computer-based search systems were examined in March 1972 to determine one which met the following criteria:

1. available quickly;
2. relatively inexpensive to acquire and use;
3. amenable to additions or modifications;
4. useful in exploring ways of searching the ERIC file and in developing search strategies.

The search system selected would then be acquired and a 6-month study would follow with the purpose of:

1. exercising and evaluating the initial system, modifying it, and adding test features, if possible;

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*The immediate and long-range tasks were originally structured by J.A. Evans under the direction of Dr. James Baker, Associate Commissioner, Research, Planning and Evaluation Division, Massachusetts Department of Education, and described in his memorandum to John Coulson, NIE, dated April 14, 1972.

2. determining different needs of various groups in the state for ERIC searches, developing expertise within the state with regard to ERIC search strategies, and identifying the requirements that a statewide ERIC search facility must fulfill;

3. pursuing an evaluation of selected computer-aided systems, with the result of recommending options which would meet the state's future needs.

In March 1972 there were almost 100 locations in the country which received the ERIC computer-searchable tapes regularly. Thus, this investigation was obviously not exhaustive. It did, however, include those users known to the Office of Education as being interested in distributing their ERIC searching computer programs.

There were three major ways of implementing ERIC computer searches (besides producing a system): On-Line Rental, System Acquisition, or Subscription to a Query Service. The following systems and services were identified:

1. On-Line Rental
   a. DIALOG (Lockheed)
   b. SDC (Systems Development Corporation)/ERIC
2. QUERY Subscription Service
   a. BOCES (No. Colorado Ed. Board of Cooperative Educational Services)
   b. QUERY/Tennessee (University of Tennessee)
3. System Acquisition
   a. BIRS (Michigan State University)
   b. GYPSY (University of Oklahoma)

c. QUERY (modified) (So. Carolina Dept. of Education)

d. RIC (No. Dakota Dept. of Public Instruction)

ANALYSIS

Based on the information gathered during the course of this study, the key elements of which are presented in Table I, an analysis of the candidate systems follows.

On-Line Systems (See Volume II, Section 5, for a thorough analysis of these on-line systems.)

On-line systems had the great advantage of enabling the user to rapidly modify his search strategy until it produced a reasonable number of appropriate documents. This could also be done with batch systems, but entailed a much longer response time. On-line systems had the disadvantage that the user could not readily add his own data base into the system (e.g., state research reports that are not in ERIC).

The acquisition cost and cost per query was high for both examined on-line systems and became competitive only as the query load increased (see Table I). An on-line system had the potential for being the optimum system for ERIC searches at some future date when the need for ERIC services in Massachusetts was better defined.

SDC/ERIC

The on-line system which seemed most economical, SDC/ERIC, had neither abstracts nor a Boston phone exchange. Since abstracts were not yet available on 28 March 1972, it was decided to wait until both abstracts and a phone exchange (promised in May) were implemented and then reexamine the service offered at that point.

Table I

Key Non-Technical Feature of Each Search System Considered+

	ON-LINE		SYSTEM ACQUISITION (for IBM 370/155 with MVT, HASP, & TSO)				SERVICES	
	DIALOG	SDC/ERIC	BIRS	GYPSY	QUERY (Modified)	RIC	BOCES	QUERY/ Tenn.
Acquisition Cost	$31,000/Yr. for 2 Hrs./Day	$7,200-$13,500/Yr.	$500 Plus Expenses	$1,000 Plus Expenses	$500 Plus Expenses	$150 Plus Expenses	Min. Subscrip. Rate of $10,000/ Year	None
Yearly Maintenance Cost	Included in Above	Included in Above	$400*	$1,200-$2,400*	$400*	$300* (plus $400 if Query not Acquired)	None	None
Cost Per Query If Weekly Load is 3/10/40	$200/$60/$15	$46/$14/$5-$6	Estimate = $45	Estimate = $45	$35/$13/$9	$16/$8/$6	$64/$19/$10	$15/$15/$15
Response Time to Receive Answers	1/2 Week	1/2 Week	1-2 Days After Run Run = Once Wk / Once Wk / 3 Times Wk	1-2 Days After Run Run = Once Wk / Once Wk / 3 Times Wk	1-2 Days After Run Run = Once Wk / Once Wk / 3 Times Wk	1-2 Days After Run Run = Once Wk / 3 Times Wk / 5 Times Wk	2-3 Weeks	2-3 Weeks
Addition of Similar Files or Program Modifications	No	No	Possible	Possible	Possible	Possible	No	No
Use of Syst. Encour. Develop. of In-House Expertise	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Time To Acquire	6 weeks to 2 Months	Not Available Yet- • no phone line, • no abstracts	Not Available Yet — Trouble with OS Version 20	2-3 Months	2-3 Weeks	1-2 Weeks	1-3 Weeks	1-3 Weeks
Approx. # of Users	5	6	7	7	6	1	5-15	5
Search Limited To	No Limit except that title & abstract not included in search.	Only descriptors, authors, publication dates	Same as DIALOG	No Limits	No Limits	Only Descriptors RIE only	(Probably like DIALOG)	(Probably no Limits)
Comments	Quality of answers is probably superior to all others except for services.	For high volume, this on-line system becomes very economical.	Either of these might be applicable to other uses in the State Department of Education. Both are large, complex, general information processing systems.		Cost can be cut on this system if subsets of the ERIC file are searched.	List of document numbers and counts of number of documents in the answers can be obtained on a daily basis for $2 to $5.	One obtains services not only of the computer search, but also of very highly trained and knowledgeable personnel.	

+This information was obtained in March 1972 and may have changed subsequently.

*Includes yearly cost of ERIC tapes as $200.

DIALOG

Lockheed's DIALOG had the advantage of an on-line Thesaurus lookup and a scope. Searches with DIALOG enabled a person's judgment to intimately affect the search strategy, producing high quality results at the cost of much on-line time per search. DIALOG was quite expensive, both because of the amount of on-line thinking per search it encouraged, and because of the cost of high-quality data lines to Washington. DIALOG was feasible if the Commonwealth were providing a total search service and not charging individual users in order to recover costs.

Query Services

Both BOCES and QUERY/Tennessee services were being used at the time of the search by different groups within Massachusetts. These services produced good results. However, the time delay for receiving a response (two to three weeks) was close to being unacceptable. This time delay also meant that the user must accept the answer received. There was no opportunity to redefine the search and try again. Thus, with no feedback, little learning occurred.

The critical element in searching the ERIC file was not the system used, but the person who searched, and in particular, this person's ability to recognize what was being requested, and to use the 7,000 descriptors in order to zero in on the relevant documents. Use of either BOCES or QUERY/Tennessee would have discouraged development of this kind of expertise within Massachusetts, both because of the large time delay in response, and because these services had experienced people who themselves redefined the search they received in order to produce a more relevant answer.

System Acquisition

Initial acquisition of any of the systems examined was much less than the minimum yearly cost of the on-line systems. Both per query cost and total yearly cost of two of the systems was less than the cheaper of the on-line systems, SDC/ERIC, until the query load was in the 100 to 200 per month range.

One disadvantage was that system acquisition involved a computer on which to run the system and computer personnel to handle the ERIC file and the quarterly updates. On the other hand, this allowed the user to add features to the system, and especially to add documents which were not in ERIC.

During the initial period of low to moderate query load, when state requirements were being explored and formulated, an in-house system would have provided more flexibility and feedback (often at less or equal cost) than either on-line rental or subscription services.

BIRS and GYPSY

Both of these were general purpose storage and retrieval systems. This meant that they not only had the ability to query files, but also to create new files, modify existing files, produce indices, and in a limited way summarize the files. This flexibility meant that the systems were large and complex and that obtaining and maintaining these systems would require a substantial initial learning effort.

BIRS

This system, written in FORTRAN, was designed to be used on non-IBM as well as IBM computers. At that time it was maintained only for the

360 series of IBM computers. BIRS consisted of 10 to 15 individual programs to structure, query, and print. From the original file, a description file was created and it was this description file which was searched. BIRS had the advantage of being useful for other kinds of data. A file could be created and then searched and summarized in a number of different ways. Use of BIRS required an ERIC conversion program to be obtained or written. BIRS had the disadvantage of not permitting searches on title and abstract words. The GYPSY people felt that this was the most significant way to query the ERIC file.

GYPSY

This set of programs had both an on-line capability and a batch mode. It searched the data file as is, enabling the user to specify parts of words in any field. The cost of scanning this way meant that generally an initial batch run through the file was performed the night before to significantly reduce the number of documents to be scanned on-line. On-line iterations through the resultant files were used to narrow down the answer. GYPSY seemed suited for complex questions of language usage, but too expensive for Project needs. GYPSY also presented problems of interface with time-sharing options. However, the question of whether or not this type of search produced more relevant answers was explored.

QUERY Modified by Dr. Dave Altus*.

QUERY, like GYPSY, searched the data file as is, enabling the user to specify parts of words in any field. QUERY had nothing else, no file management or modification capability, no on-line or iterative capability. It was therefore a smaller system, less expensive to obtain and operate, but less flexible.

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*Head Supervisor, Statistics Section, State Department of Education, South Carolina.

Dr. Altus' version was just one of a number of versions of QUERY which had worked for their users. This one was specified because it was quickly available, inexpensive, and presumably dependable, as witnessed by satisfied customers.

RIC

RIC was a batch system which used the philosophy of BIRS, DIALOG, SDC/ERIC, and others in using indices to the data file. These indices were searched in place of the data file itself, a very efficient method for large data files. RIC was identical in design to the very successful MITRE search system in use on the 60,000 document MITRE-Bedford Library. RIC used the inverted ERIC file, USEMAST, to determine a list of documents which satisfied the query. This list could either be printed out or used by a second program step which pulled off the specified citations from the ERIC data file and printed them.

RIC gave the user the capability to ask "how many documents will I get if I request the following search?", a very nice feature of the on-line systems. It was comparatively inexpensive to use. It had no applicability to non-ERIC searches.

Table II summarizes the initial criteria and how these candidate systems satisfied them.

INSTALLATION OF THE SELECTED COMPUTER SEARCH SYSTEM

In May 1972 an initial exploratory system was installed at MITRE's Bedford facility using the two programs RIC and QUERY modified to search the ERIC data base on the IBM 360/155 computer.

Table II

How the Candidate Systems
Meet Our Criteria

	Available Quickly (1 Month)	Inexpensive to Acquire ($2500)	Inexpensive to Use ($15 or Less per Query)	Amenable to Additions	Useful in Learning
ON-LINE SYSTEMS					
DIALOG	No	No	No	No	Yes
SDC/ERIC	No	No	Not at first	No	Yes
SYSTEM ACQUISTION					
BIRS	No	Yes	No	Yes	Yes
GYPSY	No	Yes	No	Yes	Yes
QUERY	Yes	Yes	Not at first	Yes	Yes
RIC	Yes	Yes	Almost Immed.	Yes	Yes
SERVICES					
BOCES	Yes	No	Not at first	No	No
QUERY/Tenn.	Yes	Yes	Yes	No	No

RIC, developed by the Resource Information Center, Grand Forks, North Dakota, was chosen because it most closely met the original SEIC criteria. Permitting document selection by subject area and searching an inverted ERIC file, RIC was used as the workhouse of the query system.

Whereas RIC provided an inexpensive way to search ERIC files, it allowed the user to search only on descriptors. The GYPSY people had indicated that searches on abstracts and titles produced the highest rate of relevant documents. For this reason, QUERY was added to the system. QUERY was chosen since BIRS and RIC did not have this capability. Also QUERY was a much simpler system than GYPSY and did not present the problems of interface with Time-Sharing Options that GYPSY presented. As a highly used system, QUERY provided a backup for the newer and less exercised RIC system.

MITRE, as a not-for-profit, developmental organization, was the ideal site at which to develop the testbed. From previous experience with other systems (see Volume II, Section 3) MITRE quickly incorporated the data bases and query programs into its computer and demonstrated a search: what it was, how it operated, and the data bases used. From this low-cost operation it was possible to evaluate what type of system should be selected to serve as the permanent information service for Massachusetts. After careful investigation it was decided to make collaborative arrangements with the San Mateo Educational Resources Center (SMERC) under the directorship of Frank W. Mattas. By having SMERC perform the searches, it was possible to capitalize on the extensive on-line ERIC search capabilities and library collections available at SMERC. Arrangements were made to have SMERC perform the searches and develop multimedia packages in response to user requests that were negotiated by the information specialists supporting the

SID service in Massachusetts. The resultant upgrading of service was performed with no impact on the standard 2-week turnaround time in the delivery of search results.

Data Bases

The search of the ERIC data base is now executed by SMERC, using the ERIC DIALOG computer-based retrieval system which draws on three major files. The first is the Research in Education (RIE) file. This file indexes approximately 100,000 documents in the fast-growing ERIC microfiche collection. The materials are available in either microfiche or hardcopy form from the National ERIC Clearinghouses, five of the MDE Regional Centers, several Massachusetts libraries, and the Merrimack Educational Center, Inc.

The second ERIC data file is the Current Index to Journals in Education (CIJE), which indexes and abstracts more than 100,000 articles published in over 800 education-related journals. These articles are not available on microfiche, but most of the journals cited in CIJE are accessible to IES.

The third file is the AIM (Abstracts of Instructional Materials) and ARM (Abstracts of Research Materials) file. It contains abstracts of documents on technical and vocational education. This data is also available on microfiche, as part of the ERIC collection.

Other data bases are also searched as necessary by the information specialists. A particularly valuable informational source is "fugitive" data, that is, material — usually teacher-initiated or locally developed — which is cataloged and on file, but which is not part of ERIC.*

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*These data bases are described in Section 5 and further detailed in Volume II, Section 6.

SECTION 4

THE RSVP APPROACH TO PLANNED CHANGE: FROM GENESIS OF A CONCEPT TO DEVELOPMENT OF A PROCESS*

INTRODUCTION

Had the Project SEIC staff confined its efforts to the development and cost-effective delivery of an improved information service for educators, its original plan would have been executed, but its objectives would not have been satisfied. However, in evaluating the (1) trends of the time (see Figure 3), (2) the concerns at the federal level with knowledge production and utilization in education, (3) the changing role of the state educational agency, and (4) key factors isolated during the early stages of the Project, it was determined that an effective outcome could be achieved only if the Project were cast in a framework of planned change. This perspective contributed to the creation of RSVP—Responsive Services for a Variety of Practitioners—a process that focuses on disseminating information on innovations as well as on the diffusion of innovations.

Concerns at the Federal Level

At the federal level, there was a growing concern with the application of the knowledge produced by research—whether in the form of information of products (materials, practices, curricula, etc.)—to the improvement of the educational system. There appeared to be little factual

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*This and portions of the following section are based on a presentation made to the American Educational Research Association Annual Conference by John A. Evans and Patricia J. Chatta in April 1974 in Chicago, Illinois.

TRENDS	IMPACTS
• TECHNOLOGICAL REVOLUTION	• RAPID CHANGE, DISCONTINUITY, AND A PROLIFERATION OF SOLUTIONS UNCOUPLED TO NEEDS
• SOCIAL REVOLUTION	• SOCIETY WITH RAPIDLY SHIFTING VALUES AND NEEDS; RISING EXPECTATIONS; CRISIS OF CONFIDENCE IN SCHOOLS; DESIRE FOR INVOLVEMENT IN EDUCATIONAL DECISION-MAKING PROCESS
• KNOWLEDGE EXPLOSION	• GROWING DATA BASE NOT NEED-RESPONSIVELY ORGANIZED TO ACCOMMODATE INFORMATIONAL NEEDS OF MULTIPLE-PUBLICS; HENCE, NOT COST-EFFECTIVELY ACCESSIBLE
• EDUCATIONAL FUNDING CRISIS	• LEVELING OFF/REDUCTION OF FEDERAL, STATE, AND LOCAL FUNDS DUE TO SHRINKING ENROLLMENTS, INFLATION, AND SHIFTING PRIORITIES
	• RECLASSIFICATION FROM CATEGORICAL TO BLOCK GRANTS VIA REVENUE SHARING RESULTING IN INTENSIFIED COMPETITION FOR EDUCATIONAL DOLLARS AT STATE AND LOCAL LEVELS

Figure 3. Trends and Their Impacts Considered in Designing Project SEIC

evidence to support the reports of superintendents and others that their school system was actually applying a specified product or practice. Trained observers who visited classrooms reported that they found a very low level of change—or no change at all. It appeared that often adoption of new materials, e.g., use of new textbooks, was perceived as synonymous with implementation of change. The new materials were acquired and disseminated, but teaching styles, for example, often did not change to facilitate their effective application and integration.

In recent years concern with increasing the impact of educational research and development has nurtured interest in the concept of linkage and support systems to better relate the producers and consumers. In terms of information dissemination, it can be stated that the ERIC network, with its 18 nationally distributed clearinghouses, was established, in part, as a model of a linkage system for the communication of research results. However, it is not clear that it is adequately serving the needs of its multiple clients, particularly practitioners.

> Many critics of the ERIC system believe it is almost entirely an instrument for the university researchers and rarely serves the real needs of teachers, administrators, and parents. The potential of the ERIC system has also been hindered by a limited base of information, an inadequate range of services, underutilization of current technologies, as well as insufficient attention to the training of potential clients in its use. New approaches to information communication need to be based on the characteristics of potential users and their communication behaviors and information needs. These approaches should also provide for user feedback to assist in modifying the system.[15]

The Project SEIC team, aware that the eventual success of the Project depended neither on developing a computer search and retrieval system nor on the premature installation of on-line terminals (see Section 3), determined that the NIE goals and Massachusetts objectives could be met, in part, by establishing more effective linkages between the user's informational needs and the nationally and locally distributed data bases. This, in turn, required the design and development of a process that (a) involved the neophyte user in determining his informational needs and (b) included a linking agency* to facilitate acquisition of need-responsive information and its cost-effective delivery to the user.

The Changing Role of the State Educational Agency

Since 1965, many State Educational Agencies (SEAs), with Massachusetts among them, had been expanding their traditional responsibilities, i.e., regulatory functions such as teacher certification, building inspections, minimum curriculum and textbook guidelines, etc., and operational functions such as running specialized schools or providing direct services, etc., to include leadership functions such as

- development of long-range planning and needs assessment procedures,[16,17,18]
- identification and diffusion of successful programs,
- provision of professional support services for innovation,
- provision of information services and technical assistance, and
- redesign of in-service educational programs and revision of certification requirements.

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*The rationale for selecting IES as the organization to serve as the linking agency and information broker is described in Section 2.

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The Massachusetts Department of Education had, for several years, been providing an information service to a very limited clientele. Budgetary constraints confined the effort to a low level. Its primary users were the in-house staff at the Central Administration Building. Efforts to decentralize the service to the Regional Centers similarly were cut short because of shifting funding priorities. Since, in this case, the provider was also the user as well as the evaluator, the impact of the service was of necessity limited. Expansion of the model to serve a larger clientele necessitated such extensive redesign that it was agreed to focus efforts on the development of an alternative model—one that would appropriately enhance the state's leadership function (see Section 2).

Other Key Factors

One event that impacted on the Project design was a shift in NIE priorities which necessitated abandoning original plans for long-term funding of model projects to ensure their acceptance and integration into the educational system. This raised the question, "If a successful service is developed, what assurances are there of its continuation when federal dollars run out?" Clearly, the state was in no position to absorb the full costs of providing the service because of its own budgetary commitments. The incentive to use the service and to more effectively apply information to the educational decision-making process would be considerably diluted if the user could not be assured of maintenance. Visits to other national centers indicated that the staffs were apprehensive of the impact of federal cutbacks on user demands for the information service. With the exception of California's SMERC (San Mateo Educational Resources Center), most anticipated sharp drops in the numbers of customers served; few expected the school districts to make up the difference for the soon-to-be-missing federal dollar.

The information service provided by most of the national information centers (again, with the exception of SMERC) tended to be of the producer-push or broadcast type. The neophyte user was not involved in determining his informational requirements in any systematic way; the centers tended to focus on delivering ERIC-supplied responses to the structured searches of "elite" information users. While several centers built services for their "neophyte" clients, these often were based on the results of evaluating and synthesizing the searches of the "elite" users. The needs of the non-user thus were perceived—but not assessed or validated—by the information center. This practice intensified the already existing information starvation/ saturation dilemma: the user who should have been receiving selective information did not know how to cost effectively access it; instead, he was now even more inundated by the large quantities of data brought to him through computer searches of someone else's queries. Nor was he guided to the more effective utilization of the information he received so that his role as, say, a teacher would be enhanced. His expectations diminished and his frustrations increased; it was fairly certain that he would not endorse or personally support a service primarily responsive to someone else's needs.*

Furthermore, it was concluded that the dissemination of information was only one step in a planned change process: to be fully effective, the process also must account for the diffusion of innovations. Unless this aspect was an integral part of the design, the user would not be able to fully appreciate the value of his role in effecting planned change.

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*These insights were derived from interviews with staffs at several national as well as local information centers.

Some Basic Propositions

The preceding trends, concerns, and factors led to the formulation of the following propositions:

- information usually is sought by an elite group, e.g., researchers, graduate students, teachers, and administrators, already familiar with the value and benefits of using information to make better decisions;
- information is needed by the whole educational community in order to effectively involve them, at various stages and to various degrees, in the educational decision-making process;
- at any given time, a large percentage of the whole educational community probably has questions about a rather limited number of pragmatic issues, e.g., open education, educational finance, teacher effectiveness, etc., which, at some level of aggregation, are fundamentally the same; and
- no one asks the vast majority of the public what they want to know or shows them how to use what they have learned to bring about goal-oriented change in education; therefore the public has no real incentive to use information.

It was believed that a process could be designed to effectively and systematically involve multiple publics in the educational decision-making process to the maximum extent feasible by

- providing easy access to information responsive to the users' questions on a variety of topics;
- improving the dissemination and utilization of information sought by the consumer;
- creating natural alliances across multiple publics who collectively and individually are at various levels of readiness for change, using as a cohesive agent their interests in a specific educational issue;

- creating task forces—across publics, across collaboratives, across regions or within single units of each of these—around a specific issue as a strategy for building problem-solving capacity and accelerating the diffusion of innovations;
- creating linkages to resources and to producers of successful practices, e.g., research laboratories, universities, and other agencies, to facilitate acquisition and evaluation of alternative solutions to the needs identified by the task force; and
- facilitating the identification and adoption of the exemplary practice selected by means of, e.g., in-service training, organizational analysis (to identify those affected by or effecting change), etc.

If these propositions could be tested and proven valid, it was believed that this process could cause citizens to seek and use information to make more effective decisions and take appropriate actions.

RSVP - RESPONSIVE SERVICES FOR A VARIETY OF PRACTITIONERS

Unique Features

RSVP was designed to provide information on issues and innovations, and to accommodate the management of diffusing those innovations selected for adoption and implementation. Its design draws upon the research of Ronald Havelock and Everett Rogers; it allows for effective use of the computer to provide information. Information is viewed as the starting point—as the means by which issues are explored, perspectives enhanced, alternative solutions identified—as the sustaining continuum—the basis on which natural alliances are formed and collaborative action plans for the implementation of the selected solution are developed—and as the product—new information for future dissemination and utilization. It is, in short, a viable framework within which strategy can be conceived, designed, and implemented.

The information provided is viewed as a basis for subsequent activities and decisions, as a "magnet" for attracting diverse publics with different backgrounds and levels of understanding to seek information and solutions to common issues of concern to them. It is a basis for relating concepts—e.g., the effective teacher in an open education environment—for collaborative approaches to implementing cost-effective solutions to common problems, for validation that what is being done is effective and on the right track. RSVP begins with organizing the user network as a prelude to defining the service network. It puts the information user in the "driver's" seat by asking him what he wants to know, and why he wants to know it. Input is sought from the whole educational community, not just the administrators, teachers, and other professional staff within the educational system. Thus RSVP enables the aggregation of concerns of single or multiple publics within a single district or region, or of single or multiple publics across districts and regions.

RSVP also includes the concept of a practitioner evaluation board—the users' own "insurance agency"—to evaluate the products and the service network tapped to provide them. The feedback generated by the board enables the governance agency—in this case, the Massachusetts Department of Education—to more effectively exert leadership in governing the overall service.

RSVP also views the change agency as a catalytic broker, a linker of people, ideas, resources, and products, and as a facilitator of planned change. It is a vehicle for identifying, pulling together, and organizing, in a needs-responsive way, the contents of formal and informal data bases housed in various national, regional, and local information centers. Institutionalizing the process gives it continuity in quality and level of effort, insensitive to changes in personnel. It assigns the responsibility for defining the outputs of the information service to the user—and not the service agency or the governance agency. The user defines what he wants to know thereby identifying the service network to be tapped in preparing responses to his informational needs, and asks the governance agency (in this case, the Massachusetts Department of Education) to assume the role of monitor, based on feedback that he, the user, will provide.

The products of this process begin with information packages designed for the "first-generation" information user as well as for the more sophisticated user. At later stages, the process produces results of needs assessments, collaborative action plans, and documentation of the strategies employed to adopt an innovative practice to enrich future information packages.

RSVP, then, recognizes that dissemination of information is not in and of itself a change strategy but a process that triggers the application and implementation of change strategies. For example, the dissemination of information might show better ways of achieving familiar goals, but the information itself must be acted upon for the desired change to be accomplished. The comprehensiveness of the RSVP process ensures that such actions can occur. Its design acknowledges that while information can, as Lippitt[19] says, create "images of potentiality," change will not be effected unless successive steps are identified and implemented. This is why RSVP is a process that, in part, provides linkages not only to relevant information but to producers of successful practices and to flexible, interdisciplinary teams in order to support the introduction of planned change.

RSVP: Searches of Common Versus Unique Questions

Information requirements of sophisticated users, because of their unique nature, always require the services of query negotiators and, if a computer were employed, of computer specialists (see Figure 4). For such a user, the process begins with his initial statement of his information requirements. In some cases, this is forwarded to a "gatekeeper," e.g., a librarian who, if qualified, negotiates the query, i.e., interacts with the originator to formulate his question more precisely. In other cases, the gatekeeper might simply forward the query to a field agent or an information specialist who performs this function. Finally, if the data base is housed in a computer, the query is forwarded to a computer specialist who translates it into machine-acceptable format.

Once the response to the query has been generated, the computer specialist transmits the information to the specialist who, in turn, forwards it to the field agent or gatekeeper. Finally, the response is returned to the user, usually with a 2- to 3-week turnaround time and at considerable expense. Statistics shows that this type of service is worth the time and cost to users already familiar with the value of information.

RSVP was designed to specifically capture the "first-generation" information user by developing a product especially designed for him—i.e., "hot" topic information packages (see Section 5). An important aspect of this strategy was to link his requests to "fourth-generation" technology to ensure quality responses from the various data bases at a cost that he could afford and was willing to pay. RSVP did not eliminate the information and computer specialists to develop such products; rather, it eliminated needlessly redundant functions and cumbersome procedures that, while essential to the sophisticated information user, were unnecessary for the service that could satisfy the needs of neophyte information users (see Figure 5).

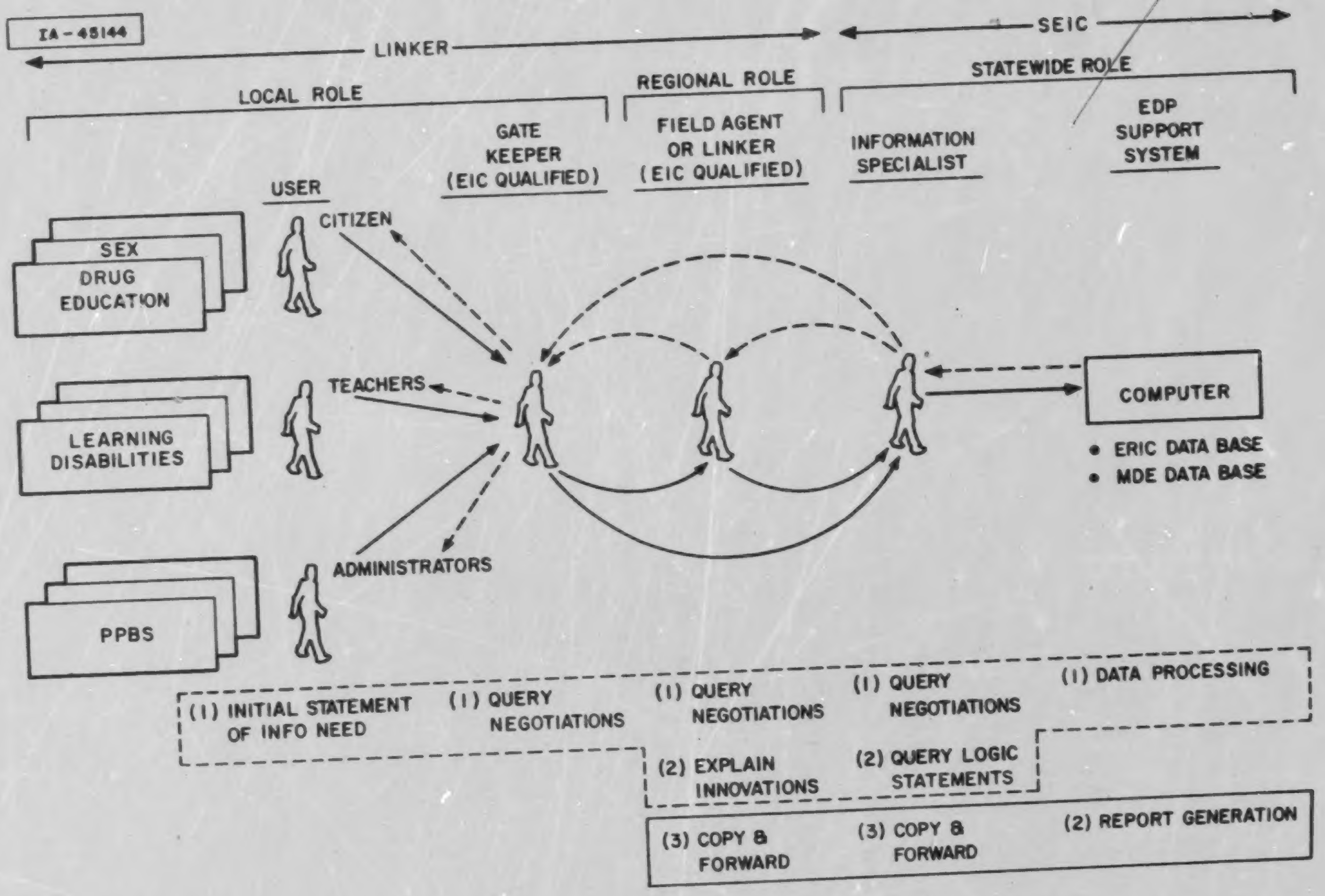

IA-45144
LINKER
SEIC
LOCAL ROLE
REGIONAL ROLE
STATEWIDE ROLE
USER
GATE KEEPER (EIC QUALIFIED)
FIELD AGENT OR LINKER (EIC QUALIFIED)
INFORMATION SPECIALIST
EDP SUPPORT SYSTEM
SEX
DRUG EDUCATION
LEARNING DISABILITIES
PPBS
CITIZEN
TEACHERS
ADMINISTRATORS
COMPUTER
• ERIC DATA BASE
• MDE DATA BASE
(1) INITIAL STATEMENT OF INFO NEED
(1) QUERY NEGOTIATIONS
(1) QUERY NEGOTIATIONS
(2) EXPLAIN INNOVATIONS
(3) COPY & FORWARD
(1) QUERY NEGOTIATIONS
(2) QUERY LOGIC STATEMENTS
(3) COPY & FORWARD
(1) DATA PROCESSING
(2) REPORT GENERATION

Figure 4. Evolving Operational Environment: SID Service

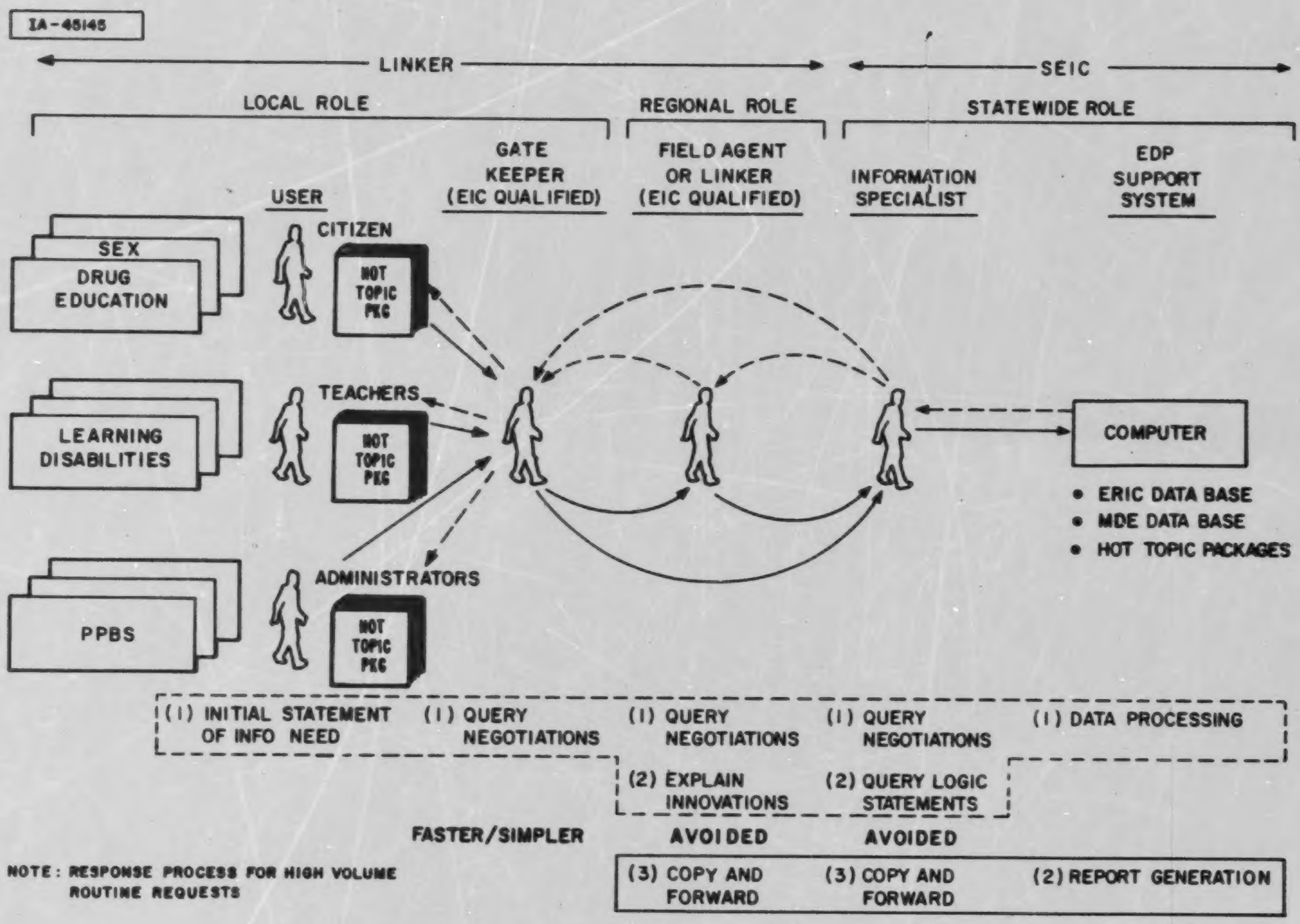

IA-45145
LINKER
SEIC
LOCAL ROLE
REGIONAL ROLE
STATEWIDE ROLE
GATE KEEPER (EIC QUALIFIED)
FIELD AGENT OR LINKER (EIC QUALIFIED)
INFORMATION SPECIALIST
EDP SUPPORT SYSTEM
USER
SEX
DRUG EDUCATION
CITIZEN
HOT TOPIC PKG
LEARNING DISABILITIES
TEACHERS
HOT TOPIC PKG
PPBS
ADMINISTRATORS
HOT TOPIC PKG
COMPUTER
• ERIC DATA BASE
• MDE DATA BASE
• HOT TOPIC PACKAGES
(1) INITIAL STATEMENT OF INFO NEED
(1) QUERY NEGOTIATIONS
(1) QUERY NEGOTIATIONS
(1) QUERY NEGOTIATIONS
(1) DATA PROCESSING
(2) EXPLAIN INNOVATIONS
(2) QUERY LOGIC STATEMENTS
FASTER/SIMPLER
AVOIDED
AVOIDED
(3) COPY AND FORWARD
(3) COPY AND FORWARD
(2) REPORT GENERATION
NOTE: RESPONSE PROCESS FOR HIGH VOLUME ROUTINE REQUESTS

Figure 5. Evolving Operational Environment: RSVP Service

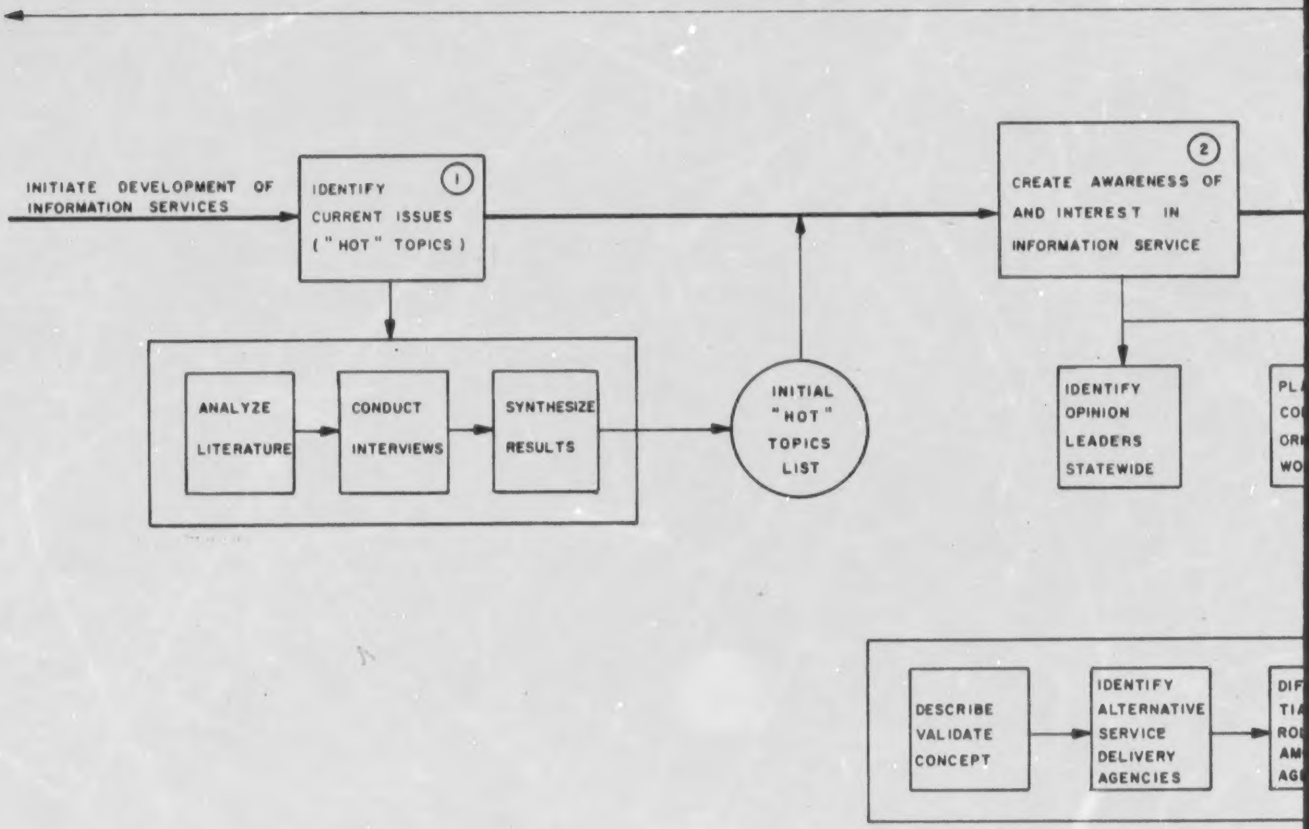
Overview of the RSVP Process

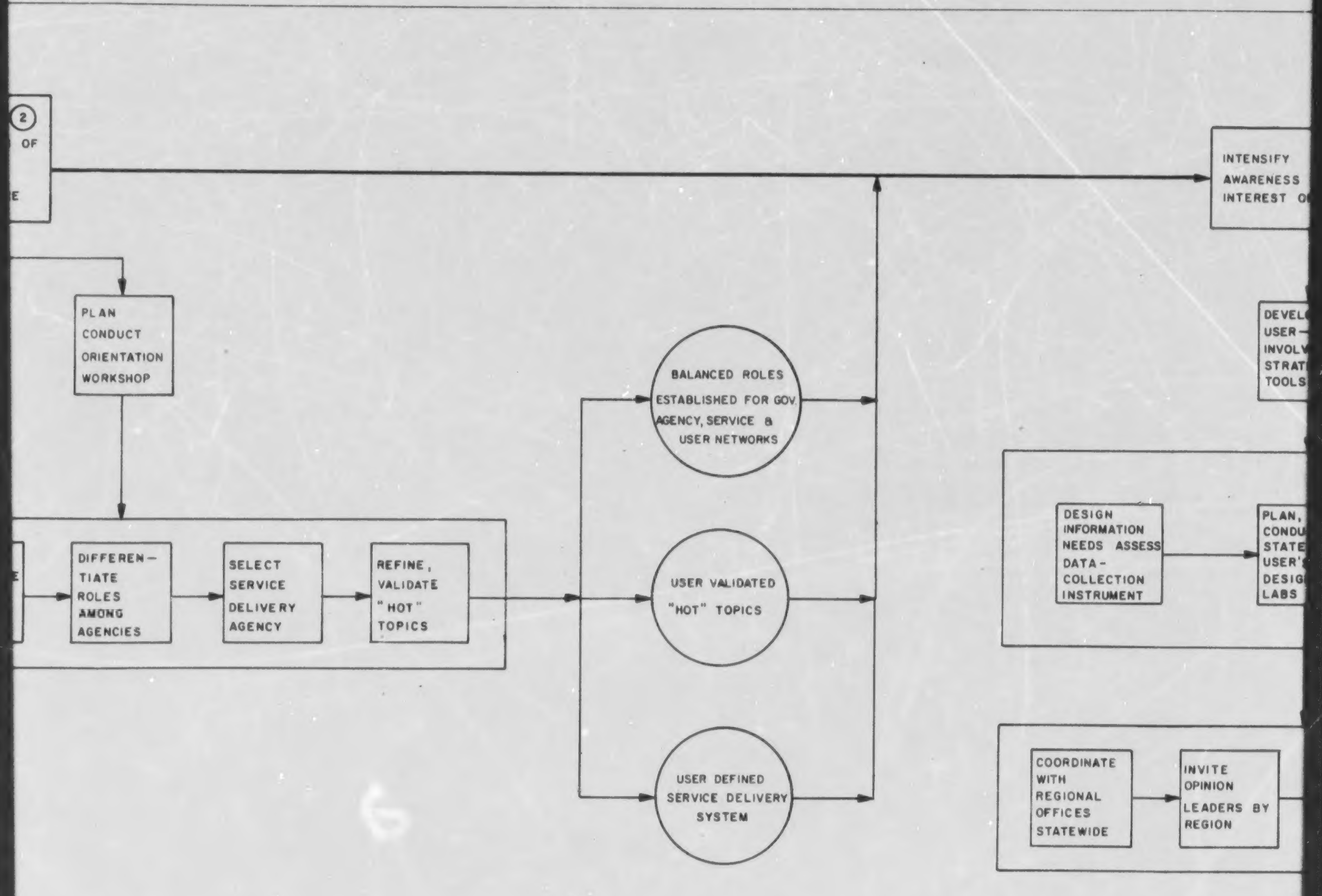
The RSVP process for the "first-generation" user involved analyzing, aggregating, and synthesizing his questions about relevant issues in a way that produced "common" questions for each hot topic. The topics themselves were selected, initially, from a review of the recent literature, and finally, by representatives of various multiple publics on behalf of the user (see Figure 6, Boxes 1 and 2).

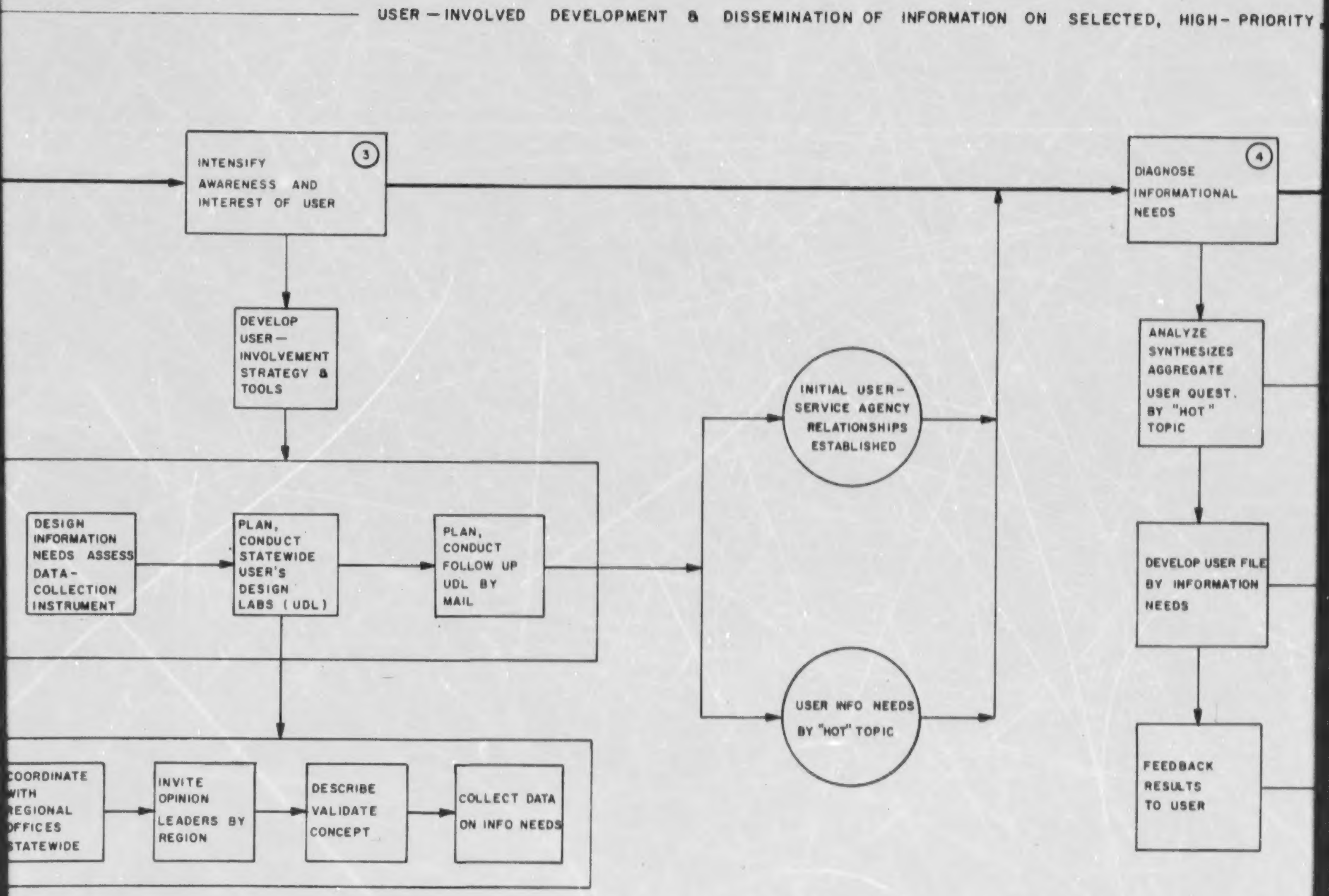
Another essential consideration in developing a service for the neophyte user was that of creating awareness (see Figure 6, Box 2). Contact with this target group was simplified by using opinion leaders within existing professional and civic organizations to gain credible entry. The RSVP concept was first presented to this group for their reaction. In effect, these people became "gatekeepers" through whom existing organizational networks were activated. The multiplier effect was built into this step of the process, for each opinion leader had access to opinion leaders on a regional basis (there are six distinct educational regions in Massachusetts) who, in turn, assisted in creating awareness among their local groups.

Through this feature, RSVP reaches out across the state to identify the issues and questions of the multiple publics directly or indirectly related to education. This effort is facilitated by User Design Laboratories coordinated by the governance agency and conducted by the linking agency throughout the six regions (see Figure 6, Box 3). User evaluation of the "hot" topics and questions relevant to those topics are gathered for subsequent diagnosis (see Figure 6, Box 4). By assembling in one large room an array of publics previously unrelated, the process ensures the development of "peer" relationships in a very unique way. Participants learn not only from the process facilitator but from each other as well. Natural alliances

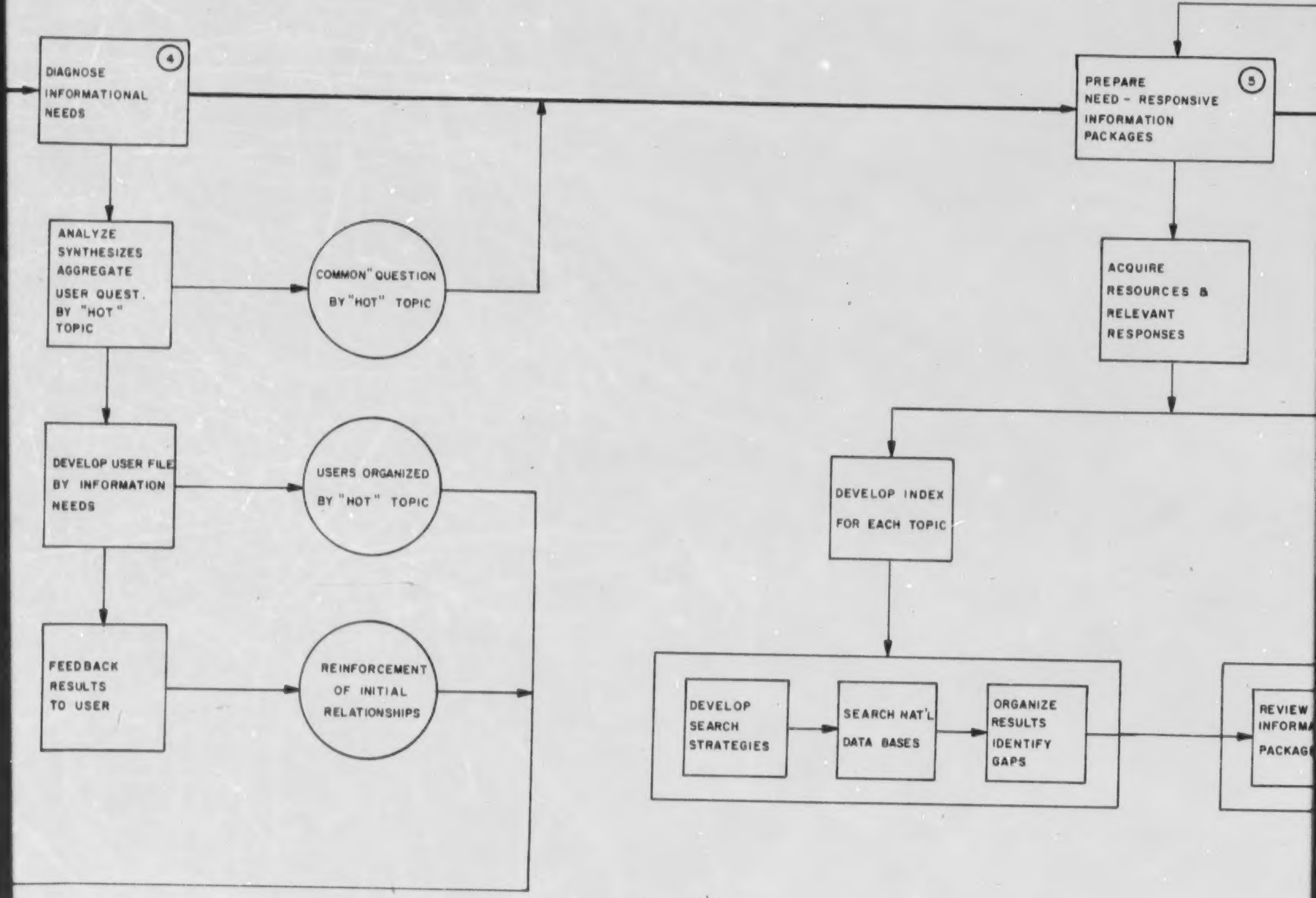
Figure 6. Overview of the RSVP Approach to Planned Change

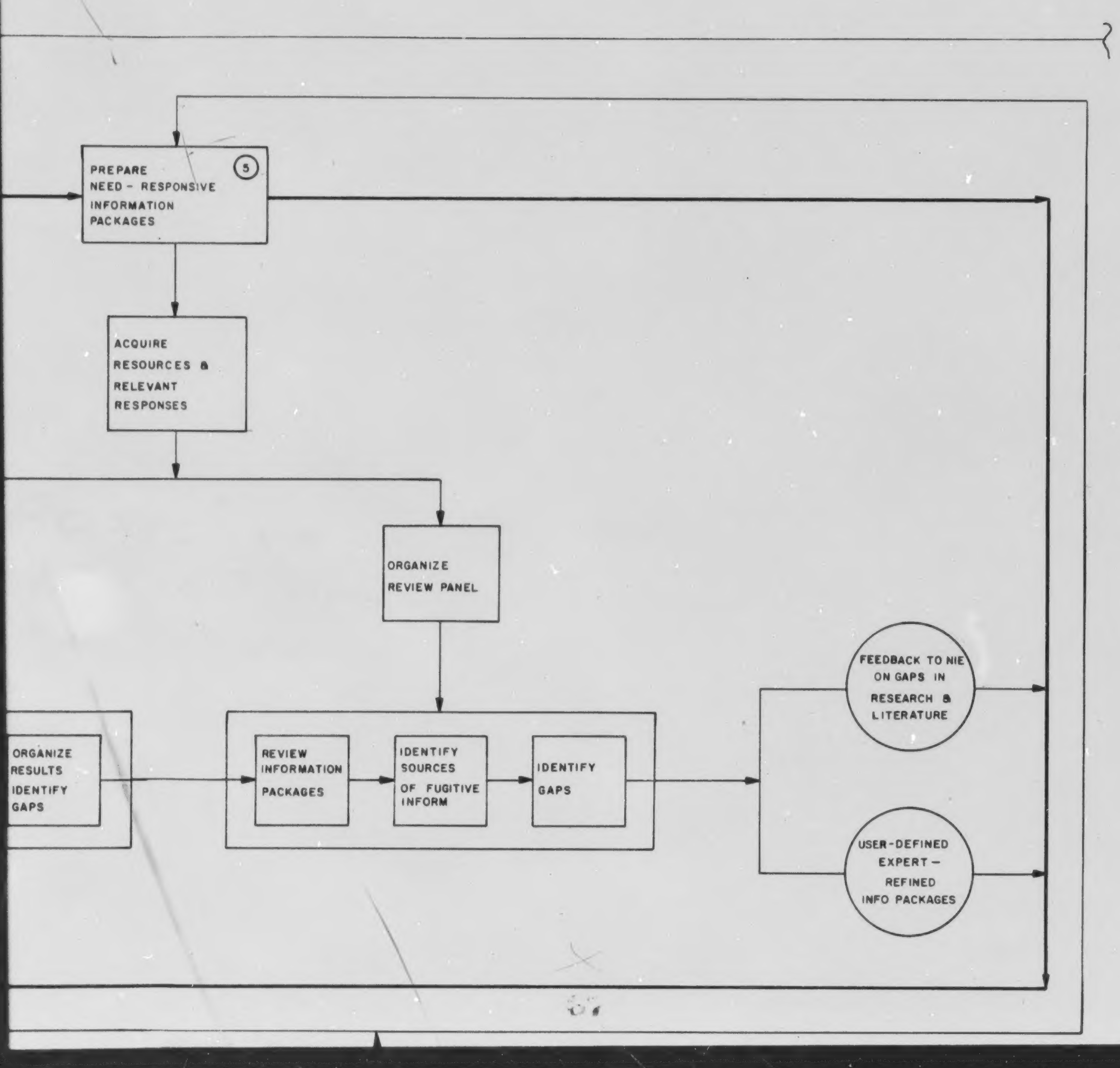

INITIATE DEVELOPMENT OF INFORMATION SERVICES
IDENTIFY CURRENT ISSUES ("HOT" TOPICS)
①
ANALYZE LITERATURE
CONDUCT INTERVIEWS
SYNTHESIZE RESULTS
INITIAL "HOT" TOPICS LIST
CREATE AWARENESS OF AND INTEREST IN INFORMATION SERVICE
②
IDENTIFY OPINION LEADERS STATEWIDE
PL
CO
OR
WO
DESCRIBE VALIDATE CONCEPT
IDENTIFY ALTERNATIVE SERVICE DELIVERY AGENCIES
DIF
TIA
RO
AM
AG

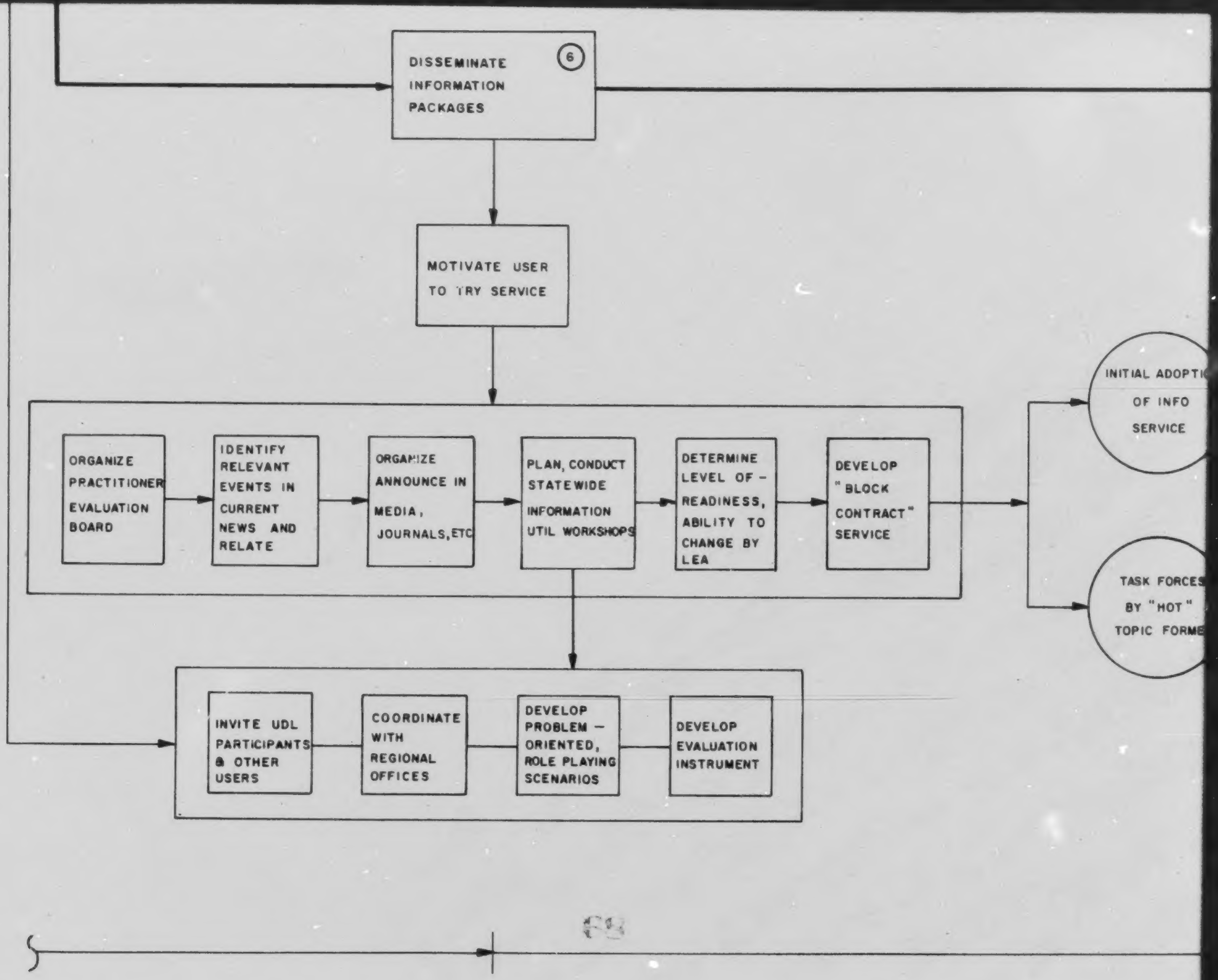

②
OF
E
INTENSIFY AWARENESS INTEREST O
PLAN CONDUCT ORIENTATION WORKSHOP
DEVEL USER— INVOLV STRAT TOOLS
BALANCED ROLES ESTABLISHED FOR GOV. AGENCY, SERVICE & USER NETWORKS
E
DIFFEREN-TIATE ROLES AMONG AGENCIES
SELECT SERVICE DELIVERY AGENCY
REFINE, VALIDATE "HOT" TOPICS
USER VALIDATED "HOT" TOPICS
DESIGN INFORMATION NEEDS ASSESS DATA-COLLECTION INSTRUMENT
PLAN, CONDU STATE USER'S DESIG LABS
USER DEFINED SERVICE DELIVERY SYSTEM
COORDINATE WITH REGIONAL OFFICES STATEWIDE
INVITE OPINION LEADERS BY REGION

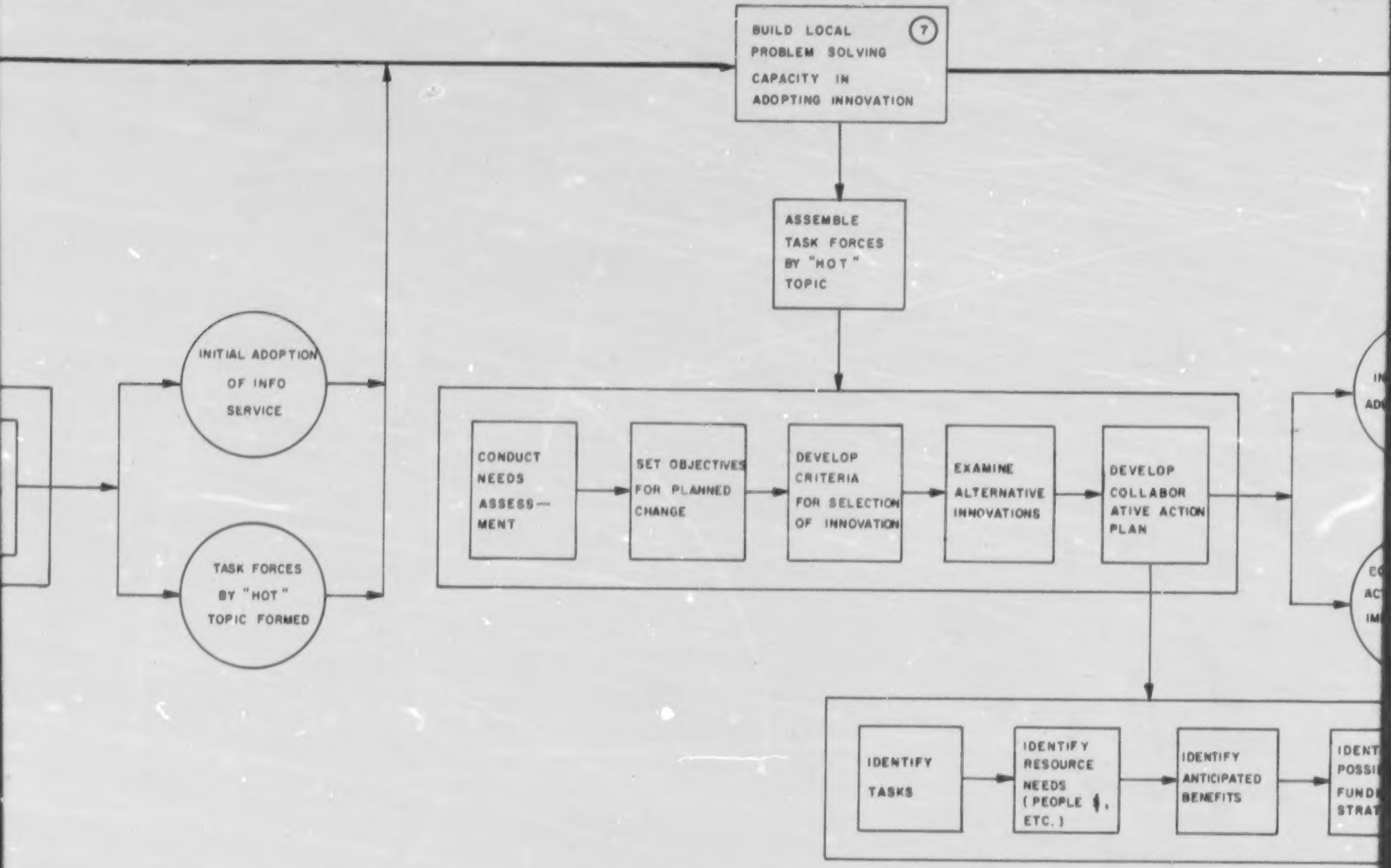

USER — INVOLVED DEVELOPMENT & DISSEMINATION OF INFORMATION ON SELECTED, HIGH- PRIORITY
INTENSIFY AWARENESS AND INTEREST OF USER
③
DIAGNOSE INFORMATIONAL NEEDS
④
DEVELOP USER— INVOLVEMENT STRATEGY & TOOLS
ANALYZE SYNTHESIZES AGGREGATE USER QUEST. BY "HOT" TOPIC
INITIAL USER-SERVICE AGENCY RELATIONSHIPS ESTABLISHED
DESIGN INFORMATION NEEDS ASSESS DATA-COLLECTION INSTRUMENT
PLAN, CONDUCT STATEWIDE USER'S DESIGN LABS (UDL)
PLAN, CONDUCT FOLLOW UP UDL BY MAIL
DEVELOP USER FILE BY INFORMATION NEEDS
USER INFO NEEDS BY "HOT" TOPIC
COORDINATE WITH EGIONAL FFICES TATEWIDE
INVITE OPINION LEADERS BY REGION
DESCRIBE VALIDATE CONCEPT
COLLECT DATA ON INFO NEEDS
FEEDBACK RESULTS TO USER

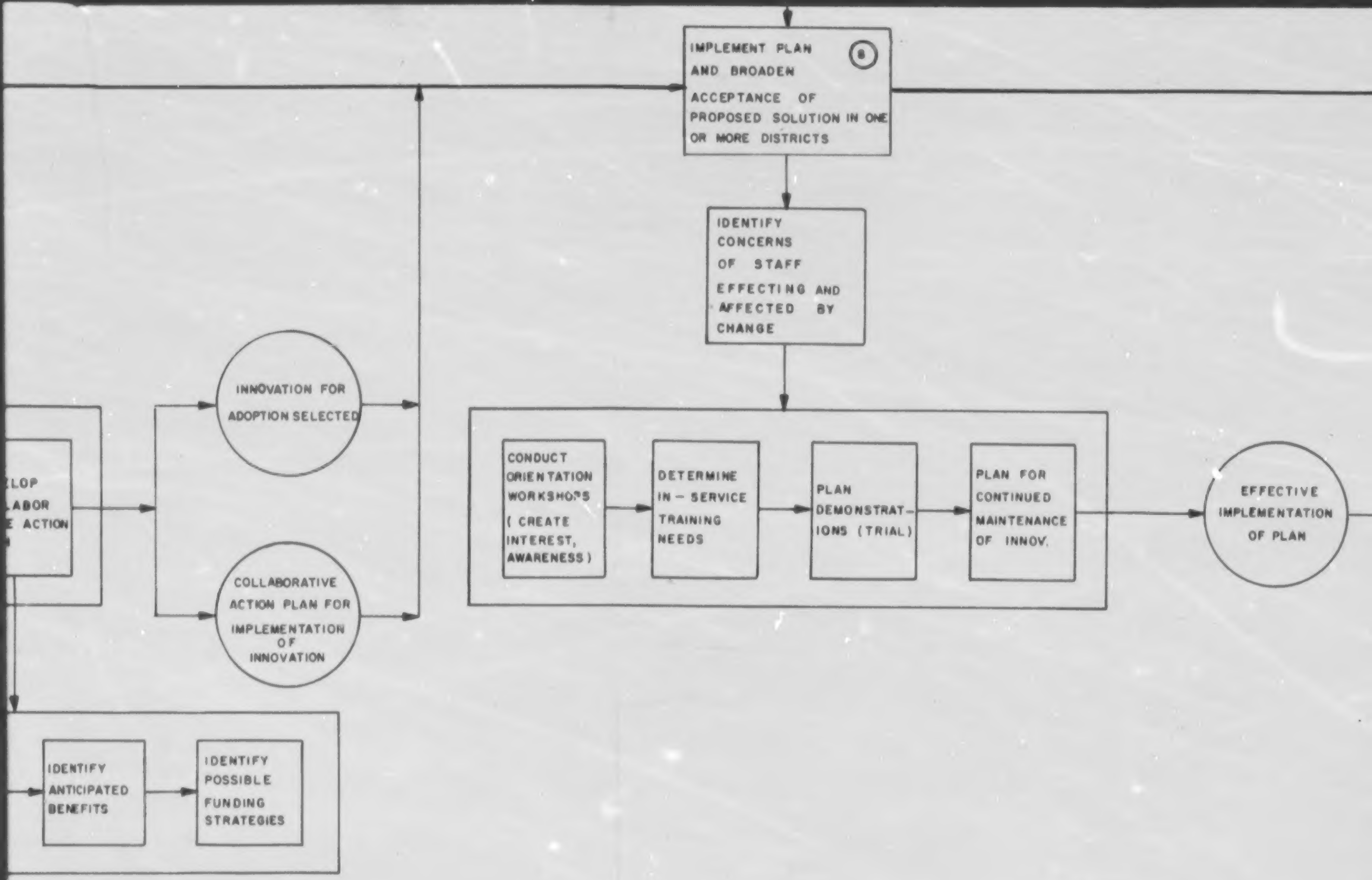
LECTED, HIGH- PRIORITY, ISSUES & INNOVATIONS


DIAGNOSE INFORMATIONAL NEEDS
4
ANALYZE SYNTHESIZES AGGREGATE USER QUEST. BY "HOT" TOPIC
COMMON" QUESTION BY "HOT" TOPIC
DEVELOP USER FILE BY INFORMATION NEEDS
USERS ORGANIZED BY "HOT" TOPIC
FEEDBACK RESULTS TO USER
REINFORCEMENT OF INITIAL RELATIONSHIPS
PREPARE NEED - RESPONSIVE INFORMATION PACKAGES
5
ACQUIRE RESOURCES & RELEVANT RESPONSES
DEVELOP INDEX FOR EACH TOPIC
DEVELOP SEARCH STRATEGIES
SEARCH NAT'L DATA BASES
ORGANIZE RESULTS IDENTIFY GAPS
REVIEW INFORMA PACKAG


PREPARE NEED - RESPONSIVE INFORMATION PACKAGES
5
ACQUIRE RESOURCES & RELEVANT RESPONSES
ORGANIZE REVIEW PANEL
ORGANIZE RESULTS IDENTIFY GAPS
REVIEW INFORMATION PACKAGES
IDENTIFY SOURCES OF FUGITIVE INFORM
IDENTIFY GAPS
FEEDBACK TO NIE ON GAPS IN RESEARCH & LITERATURE
USER-DEFINED EXPERT - REFINED INFO PACKAGES

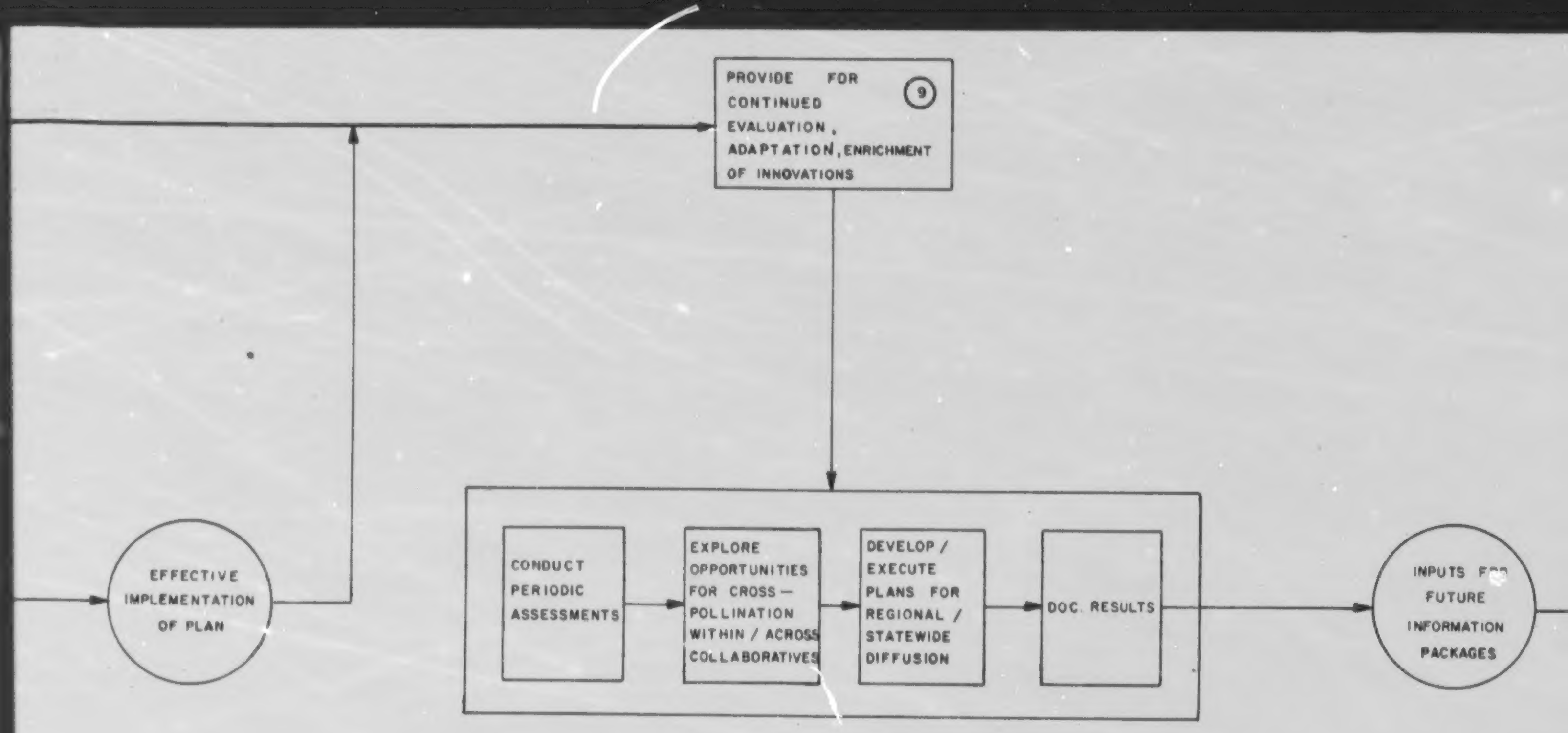

6
DISSEMINATE INFORMATION PACKAGES
MOTIVATE USER TO TRY SERVICE
ORGANIZE PRACTITIONER EVALUATION BOARD
IDENTIFY RELEVANT EVENTS IN CURRENT NEWS AND RELATE
ORGANIZE ANNOUNCE IN MEDIA, JOURNALS, ETC
PLAN, CONDUCT STATEWIDE INFORMATION UTIL WORKSHOPS
DETERMINE LEVEL OF - READINESS, ABILITY TO CHANGE BY LEA
DEVELOP "BLOCK CONTRACT" SERVICE
INITIAL ADOPTI OF INFO SERVICE
TASK FORCES BY "HOT" TOPIC FORME
INVITE UDL PARTICIPANTS & OTHER USERS
COORDINATE WITH REGIONAL OFFICES
DEVELOP PROBLEM - ORIENTED, ROLE PLAYING SCENARIOS
DEVELOP EVALUATION INSTRUMENT


BUILD LOCAL PROBLEM SOLVING CAPACITY IN ADOPTING INNOVATION
7
ASSEMBLE TASK FORCES BY "HOT" TOPIC
INITIAL ADOPTION OF INFO SERVICE
TASK FORCES BY "HOT" TOPIC FORMED
CONDUCT NEEDS ASSESS-MENT
SET OBJECTIVES FOR PLANNED CHANGE
DEVELOP CRITERIA FOR SELECTION OF INNOVATION
EXAMINE ALTERNATIVE INNOVATIONS
DEVELOP COLLABORATIVE ACTION PLAN
IN
AD
EC
AC
IM
IDENTIFY TASKS
IDENTIFY RESOURCE NEEDS (PEOPLE $, ETC.)
IDENTIFY ANTICIPATED BENEFITS
IDENT
POSSI
FUND
STRAT

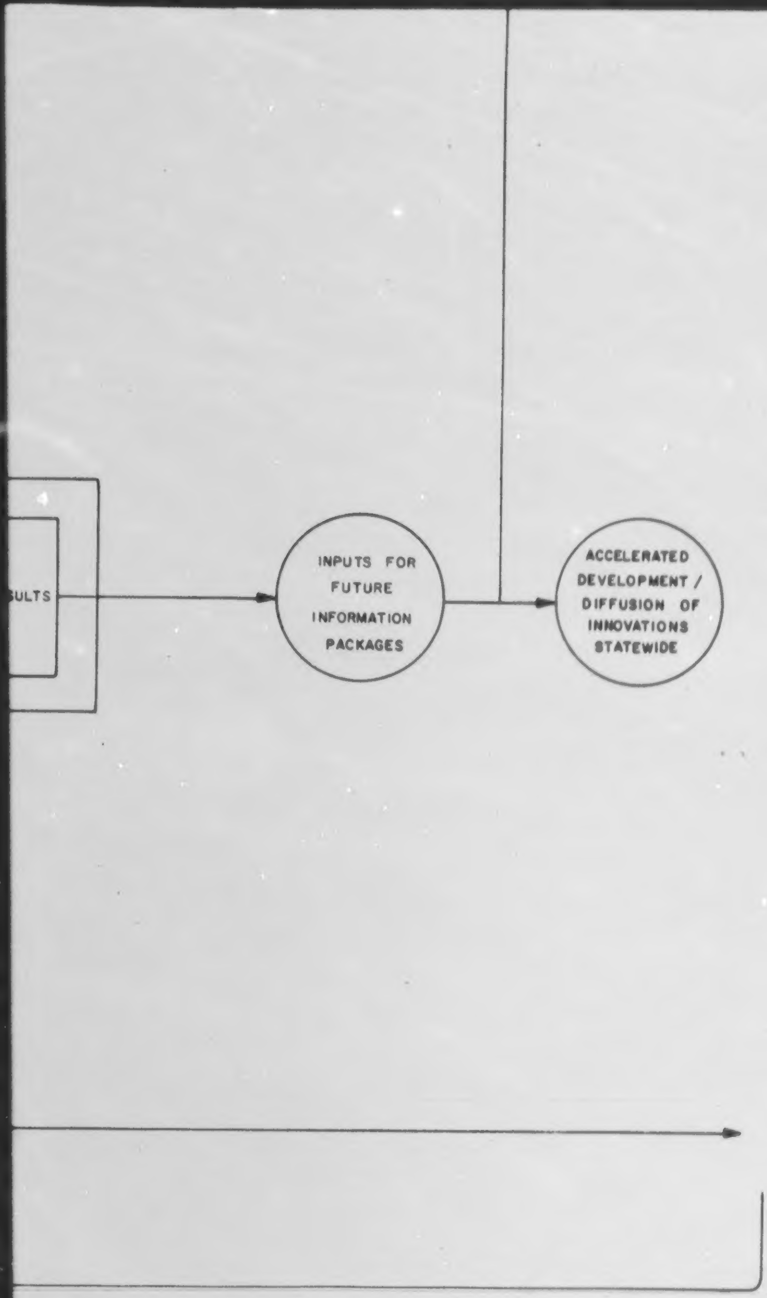

IMPLEMENT PLAN AND BROADEN ACCEPTANCE OF PROPOSED SOLUTION IN ONE OR MORE DISTRICTS
8
IDENTIFY CONCERNS OF STAFF EFFECTING AND AFFECTED BY CHANGE
LOP
LABOR
E ACTION
INNOVATION FOR ADOPTION SELECTED
COLLABORATIVE ACTION PLAN FOR IMPLEMENTATION OF INNOVATION
CONDUCT ORIENTATION WORKSHOPS (CREATE INTEREST, AWARENESS)
DETERMINE IN-SERVICE TRAINING NEEDS
PLAN DEMONSTRATIONS (TRIAL)
PLAN FOR CONTINUED MAINTENANCE OF INNOV.
EFFECTIVE IMPLEMENTATION OF PLAN
IDENTIFY ANTICIPATED BENEFITS
IDENTIFY POSSIBLE FUNDING STRATEGIES

MAJOR STEPS IN ACCELERATED DIFFUSION OF INNOVATIONS

NOT FUNDED UNDER CURRENT NIE CONTRACT


PROVIDE FOR CONTINUED EVALUATION, ADAPTATION, ENRICHMENT OF INNOVATIONS
9
EFFECTIVE IMPLEMENTATION OF PLAN
CONDUCT PERIODIC ASSESSMENTS
EXPLORE OPPORTUNITIES FOR CROSS-POLLINATION WITHIN / ACROSS COLLABORATIVES
DEVELOP / EXECUTE PLANS FOR REGIONAL / STATEWIDE DIFFUSION
DOC. RESULTS
INPUTS FOR FUTURE INFORMATION PACKAGES

CONTRACT


SULTS
INPUTS FOR FUTURE INFORMATION PACKAGES
ACCELERATED DEVELOPMENT / DIFFUSION OF INNOVATIONS STATEWIDE

across information users as well as across multiple publics are created. The more informed become "teachers" of the less informed and both are motivated to learn more.

The process enables the production of both types of information packages: that is, a prepackaged service for the neophyte user and searches-in-depth for the more sophisticated user. The first type of service responds to common questions, asked statewide, on issues such as teacher effectiveness, open education, and educational finance. The user questions are aggregated and synthesized to develop "common" questions and search strategies prepared for the computer. The responses are reviewed by local experts assembled for their knowledge of a specific "hot" topic (see Figure 6, Box 5). These packages become a unifying force important to subsequent stages of the process.

Access to the prepackaged service is facilitated by means of grids (see Figure 6, Box 5) which serve as indexes to each "hot" topic. As can be seen in Figures 8, 9, and 10 (see pages 56, 57, and 58), the "common" questions are identified at the top of each cell on the grid. The questions are supplemented by one- or two-word descriptors to provide the user with some insight on the nature of the packaged contents. If he chooses to retrieve packages, he can simply order them from a readily available supply. Periodic updating of the information packages is conducted by the linking agency to assure timeliness of the information.

The more sophisticated user is put in touch with the query negotiator who, through the linking agency, has access to extensive data bases housed at national information centers. The cost and time of the response are greater than in the case of the prepackaged service.

Had the RSVP process ended here, the intent of the funding agency, NIE, would have been satisfied. However, within the context of a planned change strategy, this stage was only a beginning (see Figure 6, Box 6). Through the linking agency's records, it would be easy to identify which publics across the state, regardless of the level of readiness and ability to use information, expressed interest in a given issue. This, in turn, intensified the need for followup action. The linking agency now could organize one of two basic types of workshops: one primarily for the neophyte user that focused on, for example, simulation techniques and problem solving to increase the utility of the information he has ordered; the other to organize task forces of multiple publics across regions, regardless of whether the individuals are neophyte or elite information users, to use the information to formulate concrete next steps (see Figure 6, Box 7).

Thus is born the notion of the task force within the RSVP process. They may come together to discuss what they have learned and to determine that they are satisfied with the status quo. Or, it may be they will conclude that the information they have is a basis for further action. Assume, for example, that the group is interested in the characteristics of an effective teacher. Both types of information searches will have produced the best of what the current literature has to say on this subject. Now the task force may be interested in developing a strategy for (a) determining what their communities perceive as effectiveness in teachers (b) relating the results of that survey to the literature, (c) sharing with their communities their profiles regarding effectiveness and what the literature defines as "good" effectiveness characteristics based on research and pragmatic insights, (d) determining in their communities what, if any, next-steps should be taken to achieve such characteristics, (e) identifying alternative means of transplanting such characteristics, e.g., in-service training programs, and (f) developing a plan for doing it (see Figure 6, Box 8).

Finally, there is continuous evaluation of the innovation as it is implemented and maintained (see Figure 6, Box 9). The final outcome of the process is an input for future information packages.

This is a complex process which is subject to early abandonment of effort if a linking agency is not available to ensure its successful outcome. At times, the task force may need the services of outside experts to facilitate setting its own objectives and developing its own collaborative action plan. Or it may need to know the implications of a suggested strategy on the existing organizational structure, or programs, or budget. It may require help in evaluating and selecting a strategy or practice for implementation or it may require help in writing a proposal to secure funding to implement the selected solution.

In all of this, the role of the linking agency is crucial. It must be able to marshall outside interdisciplinary teams to provide the expertise required; it must identify what exists and what works (or why it failed) in order to avoid duplication of effort. It must guide and shape the effort toward goal-oriented change. Finally, it must ensure that what has been learned by the task force is documented as information for future information users, and as feedback to the formal R&D system.

Because of limited funding, the process beyond simple utilization of the information has not been implemented. However, it is believed that the strategy merits implementation and testing for the literature does not appear to testify that this approach has been tried. It is further believed that through this strategy it is possible to build a linkage and support system between the research and development system and the schools. The process includes not only an information development and delivery service, but procedures for selecting and diffusing information about products and the products themselves to the schools, and a means of building capacities of intermediary organizations that link and help schools implement R&D products and provide feedback to the formal R&D system.

OPERATIONAL ASPECTS OF RSVP

As discussed earlier, a series of information packages is prepared for each common question on each "hot" topic. A model of the initially conceived information package development process for Open Education is illustrated in Figure 7. It shows the five major phases of activity: (1) Grid Development, (2) ERIC Search, (3) Cell Development and Document Retrieval, (4) Content Review, (5) Reproduction of Information Packages. The figure also illustrates the key developmental activities and resulting products within each major phase of activity.

Easy access to these packages is ensured by means of a grid (index) that maps the common questions for a "hot" topic into a classification scheme, e.g., areas of concern, possible alternative solutions, special issues, etc., and assigns a unique number to each question. Clues as to the nature of the information provided on each question are provided by means of descriptors. Access to the information packages is simplified by means of a code assigned to each "hot" topic, e.g., Teacher Effectiveness (TE), Open Education (OE), Educational Finance (EF), and to each common question, e.g., "What are the Characteristics of Effectiveness?" (TE-2), "What are the Various Aspects of the Open Education Curriculum?" (OE-8), "What are Some Alternative Finance Plans?" (EF-8). Figures 8, 9, and 10 illustrate these grids.

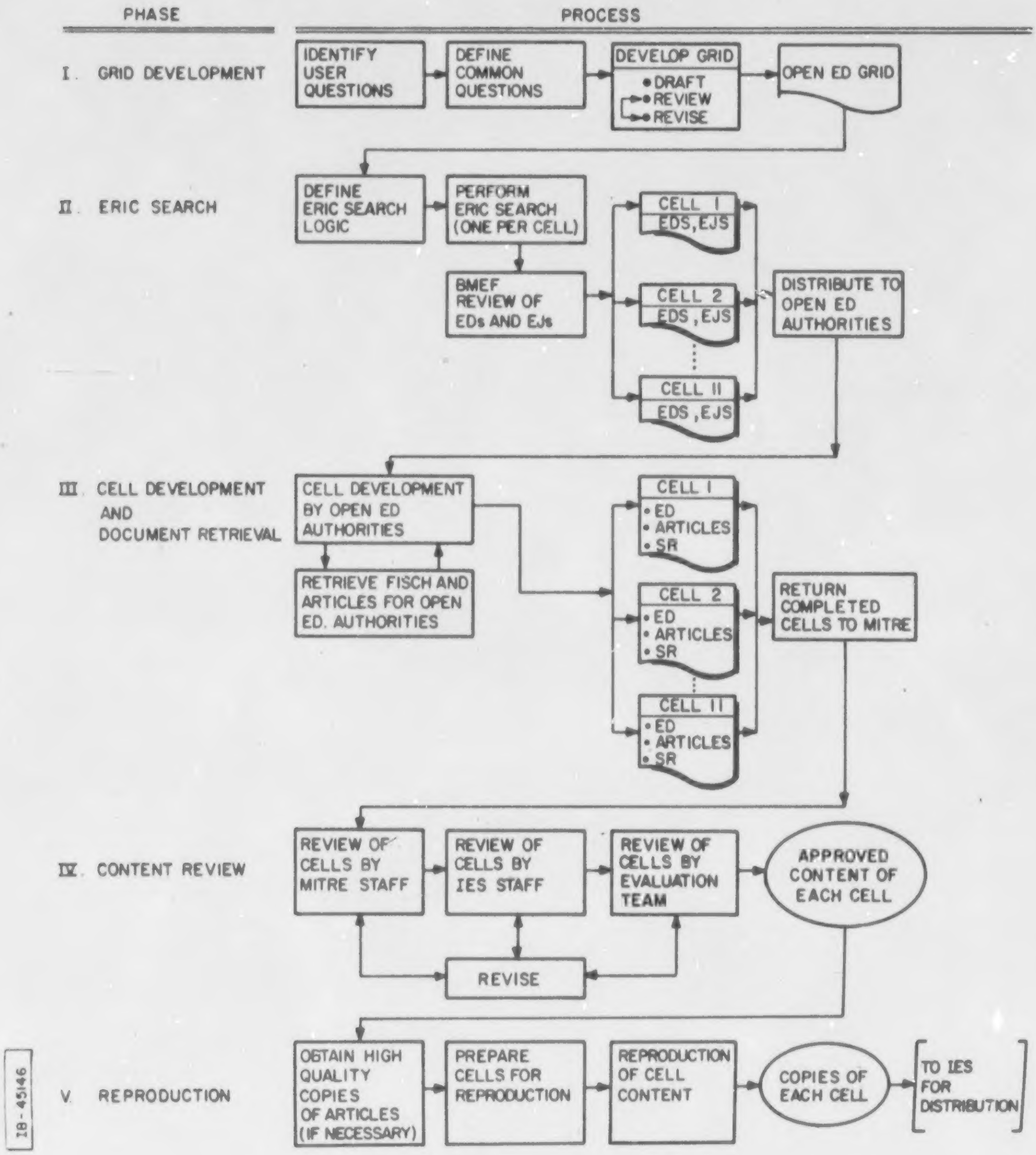

PHASE
PROCESS
I. GRID DEVELOPMENT
IDENTIFY USER QUESTIONS
DEFINE COMMON QUESTIONS
DEVELOP GRID
• DRAFT
• REVIEW
• REVISE
OPEN ED GRID
II. ERIC SEARCH
DEFINE ERIC SEARCH LOGIC
PERFORM ERIC SEARCH (ONE PER CELL)
BMEF REVIEW OF EDs AND EJs
CELL 1 EDS, EJS
CELL 2 EDS, EJS
CELL 11 EDS, EJS
DISTRIBUTE TO OPEN ED AUTHORITIES
III. CELL DEVELOPMENT AND DOCUMENT RETRIEVAL
CELL DEVELOPMENT BY OPEN ED AUTHORITIES
RETRIEVE FISCH AND ARTICLES FOR OPEN ED. AUTHORITIES
CELL 1
• ED
• ARTICLES
• SR
CELL 2
• ED
• ARTICLES
• SR
CELL 11
• ED
• ARTICLES
• SR
RETURN COMPLETED CELLS TO MITRE
IV. CONTENT REVIEW
REVIEW OF CELLS BY MITRE STAFF
REVIEW OF CELLS BY IES STAFF
REVIEW OF CELLS BY EVALUATION TEAM
APPROVED CONTENT OF EACH CELL
REVISE
V. REPRODUCTION
OBTAIN HIGH QUALITY COPIES OF ARTICLES (IF NECESSARY)
PREPARE CELLS FOR REPRODUCTION
REPRODUCTION OF CELL CONTENT
COPIES OF EACH CELL
TO IES FOR DISTRIBUTION
18-45146

Figure 7. Overview of Development of Information Packages

TEACHER EFFECTIVENESS

Areas of Concern			Alternate Actions					Special Issues
Why is teacher effectiveness important?	What are the characteristics of effectiveness?	How can effectiveness be quantitatively and qualitatively measured?	What are the implications for teacher training?		How can pupil performance be improved?	How can hiring practices be improved?	What is the relationship between rewards and teaching effectiveness?	What is the impact of (a) tenure and (b) teachers organizations?
			Pre-service	In-Service				
• Relationship to: -Achievement Motivation -Accountability -Lifelong Learning -Behavioral Change -Educational Quality TE-1	**Theory** • **Predictors** • **Evaluation Criteria** • **Teaching Skills** • **Attitudes** **TE-2**	**Theory** • **Measurement Techniques** • **Validity** • **Criteria** • **Research Progress** - **Classroom Processes** - **Presage, Setting and Process Variables** **TE-3**	**Theory** • **Model Systems** • **Alternative Strategies** • **Performance Based Education** • **Program Evaluation** • **Society's Expectations** **TE-4**	**Theory** • **Classroom Environment** • **Training Programs** • **Motivation** • **Self-Appraisal Guide** • **Classroom Performance Standards** **TE-5**	**Theory** • **Teaching Styles** • **Learning Motivation** • **Academic Achievement** • **Teacher Influence** • **Student Self-Development** **TE-6**	• Criteria For Selection • Techniques • Predictive Validity • Check Lists • Project CAPTA • Needed Research TE-7	• Merit Rating Programs • Problems & Alternatives • Accountability Through Merit Salaries • Motivational Incentives TE-8	• Pros and Cons of Tenure Abolishment • Faculty Evaluation Problems • Accountability • Impact of Teacher Organizations • Academic Freedom TE-9
Who evaluates effectiveness?						How can staffing patterns be varied to improve effectiveness?	What are the responsibilities of the school and the community?	What is the effect of legislation?
• Roles of -School Board -Managers -Peers -Students • Use of Feedback • Guidelines TE-10	**Practice** • **Predictors** • **Teaching Guides** • **Teaching Skills** • **Personal Qualities** • **National Surveys** **TE-11**	**Practice** • **Taxonomies** • **Observations** • **Self-Inventory** • **Performance Criteria** • **Tests** **-Construction** **-Validity** **TE-12**	**Practice** • **Teacher Compet.** • **Special Programs** • **Internships** • **Microteach.** • **Certification** **TE-13**	**Practice** • **Teacher Experience** • **Diagnostic Tests** • **Use of Multi-Media** • **Observation Techniques** • **Individual Characteris.** **TE-14**	**Practice** • **Teaching Methods** • **Classroom Observation** • **Academic Achievement** • **Criterion-Referenced Tests** • **Failure Factors** **TE-15**	• Team Teaching • Differentiated Staffing • Teaching Aides • Volunteers • Staff Utilization TE-16	• Roles -Lay Participation -School Boards -Professional Associations • Community Influence • Policies & Practices TE-17	• Collective Negotiation • Accountability & Assessment • Certification • Stull Bill (California) TE-18

The RSVP pages are based on a concept developed by The MITRE Corporation
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Figure 8. Teacher Effectiveness Grid

OPEN EDUCATION

BACKGROUND AND DEFINITIONS		PLANNING – IMPLEMENTATION – OPERATION			
What are the philosophical and historical foundations of Open Education?	What is meant by the term Open Education?	What should be considered in planning Open Education programs?	How does space and design relate to the open concept?	What considerations should be given to the staffing of Open Education programs?	What kind of training/retraining is required to teach in an Open Education program?
o Underlying Philosophies & Psychologies – Dewey – Piaget – Montessori o British Primary Schools – Evolution – Characteristics – Success Factors o Beginnings in America o Other Considerations – Alternatives – Free Schools – Experimental Schools	o Concept of Open Ed. o Definitions o Characteristics o Goals & Objectives o Assumptions About Learning and Knowledge o Synonomous & Related Terminology o Bibliographies on Open Ed.	o Making the Case for Open Ed. o Planning Factors o Transitional Considerations o School-Community Relations o School Board Involvement o Potential Problem Areas o Lessons Learned o Local Accounts	o Space Utilization o Design Considerations o Classroom – Furniture – Arrangement o Use of Existing Buildings o Remodeling o Open Space o Open Plans o Flexible Space	o Administrators – Leadership – Changes in Style & Role – Accountability o Staffing – Patterns – Differentiated Staffing – Use of Paraprofessionals – Specialists – Teachers o Support Personnel	o Preservice Training – Undergraduate – Graduate – Teacher Development o In-Service Training – Re-training – Un-training – Attitudes – Workshops – Instructional Techniques – Training Methods
OE 1*	OE 2	OE 3	OE 4	OE 5	OE 6

PLANNING – IMPLEMENTATION – OPERATION (continued)		EVALUATION	SPECIAL ISSUES		
How are learners selected, grouped and motivated in Open Education programs?	What are the various aspects of an Open Education curriculum?	What evaluation has been done of Open Education programs and student achievement?	What is Open Education at the middle and secondary grade levels?	What resources are available for use and observation?	What are the fiscal requirements and concerns?
o Selection of Students o Grouping of Students – Graded – Ungraded – Nongraded o Motivation o Development	o Instructional Change o Instructional Theories, Practices and Patterns o Open Curriculum o Curriculum Development	o Staff – Evaluators – Tools & Techniques o Students – Achievement – Development – Evaluation Techn. o Programs – Comparative Results – Tools & Techniques – Considerations	o Middle Schools – Grouping – Programs – Curriculum o Junior High – Concepts – Definitions – Curriculum o High Schools – Open Campus – Open Corridor – Scheduling – Programs	o Films o Audio-Visual o Case Studies o Successful Practices o Available Resources o Resource Bibliographies	o Budget Considerations o Cost of Open Ed. Programs – Set-up Costs – Operating Costs o Cost Comparisons – Open vs Traditional – Programs
OE 7	OE 8	OE 9	OE 10	OE 11	OE-12*

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*This information package is currently not available due to the limited amount of relevent material.

The RSVP pages are based on a concept developed by The MITRE Corporation. This page was designed by MITRE in collaboration with staff members of Lesley College; Project Follow-Through, Educational Development Center; the Greater Boston Teachers Center; the Regional Early Childhood Center; and the Common Concerns Collaborative in Open Education, Title III, ESEA.

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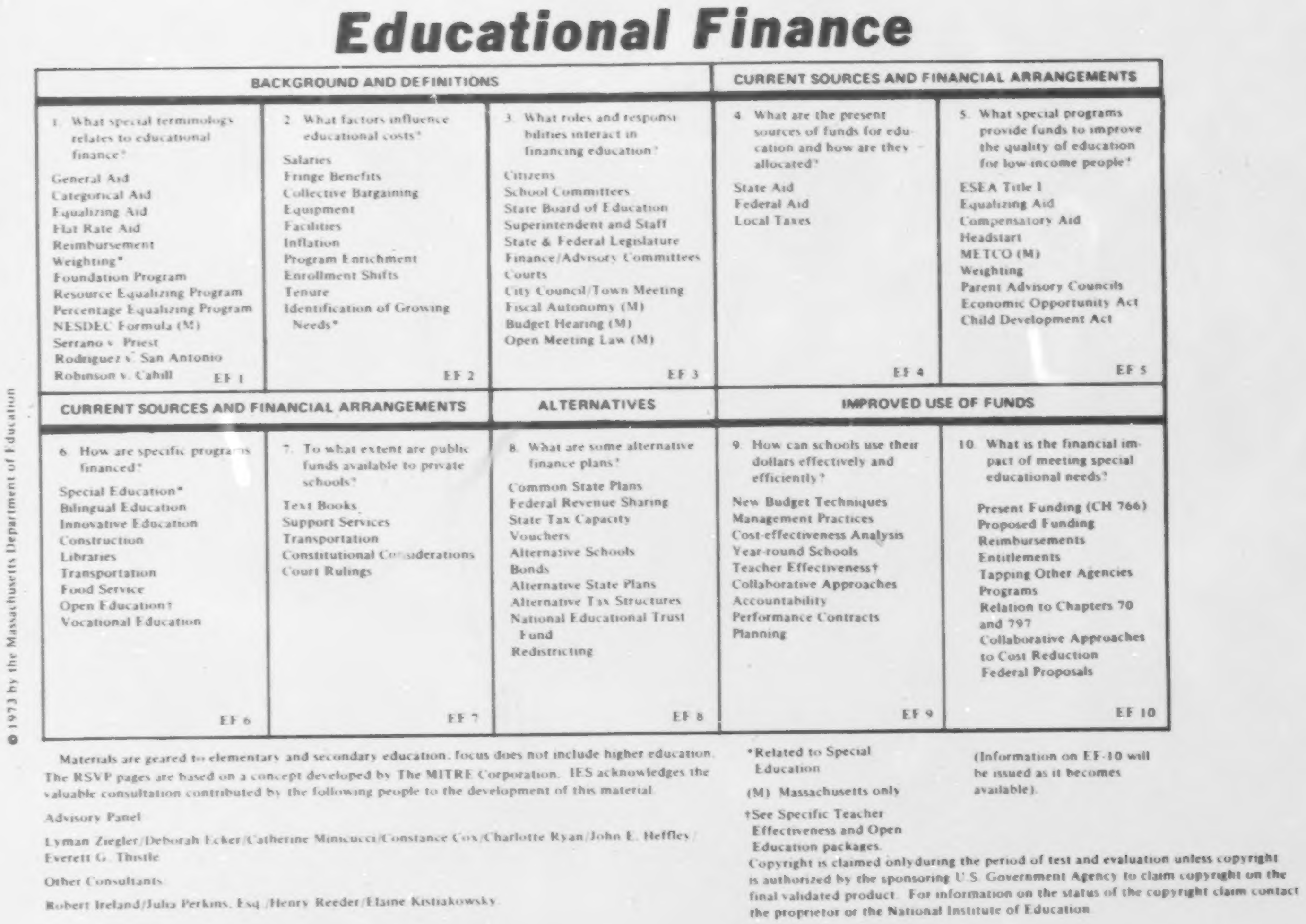
Figure 9. Open Education Grid



Educational Finance

BACKGROUND AND DEFINITIONS			CURRENT SOURCES AND FINANCIAL ARRANGEMENTS	
1. What special terminology relates to educational finance?	2. What factors influence educational costs?	3. What roles and responsibilities interact in financing education?	4. What are the present sources of funds for education and how are they allocated?	5. What special programs provide funds to improve the quality of education for low-income people?
General Aid Categorical Aid Equalizing Aid Flat Rate Aid Reimbursement Weighting* Foundation Program Resource Equalizing Program Percentage Equalizing Program NESDEC Formula (M) Serrano v. Priest Rodriguez v. San Antonio Robinson v. Cahill	Salaries Fringe Benefits Collective Bargaining Equipment Facilities Inflation Program Enrichment Enrollment Shifts Tenure Identification of Growing Needs*	Citizens School Committees State Board of Education Superintendent and Staff State & Federal Legislature Finance/Advisory Committees Courts City Council/Town Meeting Fiscal Autonomy (M) Budget Hearing (M) Open Meeting Law (M)	State Aid Federal Aid Local Taxes	ESEA Title I Equalizing Aid Compensatory Aid Headstart METCO (M) Weighting Parent Advisory Councils Economic Opportunity Act Child Development Act
EF 1	EF 2	EF 3	EF 4	EF 5

CURRENT SOURCES AND FINANCIAL ARRANGEMENTS		ALTERNATIVES	IMPROVED USE OF FUNDS	
6. How are specific programs financed?	7. To what extent are public funds available to private schools?	8. What are some alternative finance plans?	9. How can schools use their dollars effectively and efficiently?	10. What is the financial impact of meeting special educational needs?
Special Education* Bilingual Education Innovative Education Construction Libraries Transportation Food Service Open Education† Vocational Education	Text Books Support Services Transportation Constitutional Considerations Court Rulings	Common State Plans Federal Revenue Sharing State Tax Capacity Vouchers Alternative Schools Bonds Alternative State Plans Alternative Tax Structures National Educational Trust Fund Redistricting	New Budget Techniques Management Practices Cost-effectiveness Analysis Year-round Schools Teacher Effectiveness† Collaborative Approaches Accountability Performance Contracts Planning	Present Funding (CH 766) Proposed Funding Reimbursements Entitlements Tapping Other Agencies Programs Relation to Chapters 70 and 797 Collaborative Approaches to Cost Reduction Federal Proposals
EF 6	EF 7	EF 8	EF 9	EF 10

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Materials are geared to elementary and secondary education; focus does not include higher education. The RSVP pages are based on a concept developed by The MITRE Corporation. IES acknowledges the valuable consultation contributed by the following people to the development of this material.

Advisory Panel:

Lyman Ziegler/Deborah Ecker/Catherine Minicucci/Constance Cox/Charlotte Ryan/John E. Heffley/Everett G. Thistle

Other Consultants:

Robert Ireland/Julia Perkins, Esq./Henry Reeder/Elaine Kistiakowsky

*Related to Special Education

(M) Massachusetts only

†See Specific Teacher Effectiveness and Open Education packages.

(Information on EF-10 will be issued as it becomes available).

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Figure 10. Educational Finance Grid

Because the packages are prepared ahead of time and because user interaction with an information specialist is unnecessary, both the time required to respond to a request and the cost of delivering the service are significantly reduced.

Preparation of packages is guided by an advisory committee organized by IES for their recognized expertise regarding a particular "hot" topic. Individual members of the committee assume responsibility for the final preparation of from one to three information packages by (1) reviewing the ERIC search results, (2) selecting the 10-20 most relevant document abstracts, (3) selecting 5-8 of the most relevant articles (drawing heavily on their own non-ERIC literature sources) for inclusion as hard copy and (4) developing a one-to-two page selected reading list (bibliography) for each information package. Finally, at the end of the cell development process, a group of "not-previously-involved" authorities and practitioners would be assembled to review the information packages as a final content validation measure.

Because input is sought from the whole educational community, and not just the administrators, teachers,and other professional staff within the educational system, the RSVP process can be applied to aggregate the needs of single or multiple publics within a single district or region and of single or multiple publics across districts or regions. By so aggregating the market, RSVP provides a basis for not only identifying criteria for the type of successful practices needed to alleviate the problem(s) but for cost effectively introducing the practice once identified.

The practitioner evaluation board included in the RSVP design is the users' own mechanism for evaluating the products and the service network that provides them. The feedback generated by the board enables the state to more effectively exert leadership in governing the overall service.

Adoption of the Concept and Implementation of the Process

Elaborate measures were taken to ensure that evaluation of the RSVP concept would also facilitate its credible entry as an information service. Announcement of the proposed service was made at a conference that included divisional leaders and bureau chiefs from the Massachusetts Department of Education; heads of existing collaboratives, some of whom were interested in delivering the service; representatives of education-related professional societies such as the Massachusetts Teachers Association, the Massachusetts Association of School Superintendents, and the Massachusetts Advisory Council on Education; the State Board of Education; librarians; and opinion leaders of existing statewide civic networks such as the League of Women Voters. It was believed that if these participants, regarded as credible by their own organizations, approved the concept and recommended it for adoption, they in turn would form a network of opinion leaders who could help to intensify awareness of and interest in the approach among the constituencies each represented.

Once the conferees had been made aware of the nature, scope, and intent of the RSVP concept, their interest was immediately intensified by putting them into the RSVP "driver's seat" by asking them to define the "hot" topics to be initially included in the service and to help select the agency that would be responsible for facilitating both the process and the delivery of the products.

As a result of the participants' inputs, 21 "hot" topics were identified for subsequent ranking through statewide User Design Labs (see below). Furthermore, after extensive and intensive participation in exploring the advantages and disadvantages of having various service agencies, including the Department of Education, deliver the service, a recommendation favoring IES as facilitator was made and accepted. More important, awareness of interest in the concept stimulated recommendations to continue development of the RSVP approach. As a result, the Department implemented the next steps by scheduling User Design Labs at its six Regional Education Centers (see Volume II, Section 5 for materials on the User Design Labs). This ensured that inputs on information requirements would be obtained from multiple publics across regions within the state.

Adoption of the RSVP process was accomplished in part through six User Design Labs that served as vehicles for creating awareness of and interest in the RSVP process. Participants at these labs were invited because of their identity as regional or local opinion leaders and, in most cases, were associated with an existing network to which they were credible. Awareness and interest were intensified through involvement of the local press as well as through personal letters and announcements.

Participants were not just given a role but were put in charge of defining the nature and scope of the information service to be developed. Needs assessments were facilitated by means of a data-collection instrument designed for this purpose. The results enabled not only aggregation of needs by multiple or single publics within and across regions on the basis of "hot" topics, but provided a rationale for creating, across regions if necessary, natural alliances of practitioners interested in the alleviation of a need of common interest.

Input was sought by means of the instrument (see Volume II, Section 5) as follows: the potential users were asked to rank the previously identified "hot" topics, eliminating any that they considered irrelevant to the informational needs of the organization each represented and adding any they thought would be of particular interest. They also identified why they wanted information on the five topics each rated highest, and articulated three specific questions on each such topic. In addition, each participant was asked to provide five names of leaders within his or her organization throughout the state, and asked to contact them personally to inform them of the project and its aims.

Special followup packages were designed and mailed to these people who, in turn, were asked to personally deliver the data-collection instruments to key opinion leaders in their own communities. More than 550 returns were received from a one-time mailing of approximately 800 questionnaires. As a result of this statewide assessment of "hot" topics, the following ranking resulted:

1. Teacher Effectiveness
2. Individualized Instruction
3. Community Involvement
4. Curriculum (Design, Enrichment)
5. Educational Goals
6. Occupational Education
7. Educational Finance
8. Educational Innovations
9. Educational PPBS
10. Special Education
11. Open Education
12. Instructional Materials
13. Needs Assessment
14. Underachievers
15. Behavioral Objectives
16. Nongradedness
17. Differentiated Staffing
18. Performance Contracting
19. Year-Round Scheduling
20. Sharing Facilities
21. Bilingual Education

This process enabled the Project staff to gather relevant information from potential users throughout the state and, at the same time, created awareness of and interest on the parts of those who participated. Thus by working through existing organizations, it was possible to quickly collect for analysis credible data that would determine in what order RSVP information should be developed, given the availability of local experts to help refine them.

Analysis and synthesis of the data collected statewide provided the basis for the final design of the service. The topic receiving the highest priority of the whole educational community—administrators, teachers, parents, nonparent citizens, and students—was addressed first (see listing above). Specific data on Teacher Effectiveness (see Volume II, Section 5) then was extracted from the appropriate questionnaires, aggregated, analyzed, and synthesized in order to develop the "common" questions. In the case of Teacher Effectiveness, for example, 13 common questions were identified, 5 of which had 2 aspects: theory and practice.

Search strategies were developed for each question and processed not only through the MITRE computer but through other selected, nationally based information centers as well. In addition, inputs were acquired from researchers nationally renowned for their work in the general area of teacher effectiveness and teacher evaluation.

Information on each question was collected in a variety of formats: printouts of document titles, authors, and abstracts; journal citations; copies of relevant journal articles retrieved by research assistants; and copies of documents provided by experts in the field. The Project staff assessed the information and eliminated those inputs obviously irrelevant to the topic. Through the auspices of IES, local-area experts were invited to participate in selecting the final inputs to each package and to provide additional inputs if their own personal files contained relevant information.

Description of the RSVP Information Package

The contents of each package included information in a variety of formats to satisfy the various requirements of the potential multiple-public user. Abstracts of relevant documents, copies of selected significant articles, and a selected reading list constituted the fundamental package. Also included was an evaluation form to facilitate immediate feedback as the user tried and adopted the service. A variable pricing structure was used to encourage the purchase of multiple packages (see Volume II, Section 7 of this report).

The total content of an RSVP package consists of the following items:

- Table of Contents

  A list of ERIC abstracts and articles in each package for each "hot" topic

- How to Interpret an Abstract

  Helpful hints to guide users in understanding an abstract

- ERIC Abstracts

  Abstracts selected for their relevance to a specific information package

- User's Guide

  A listing of statewide facilities that can furnish complete copies of the documents described by the enclosed abstracts

- Selected Journal Articles

  A package of several articles selected for their relevance to the topic

- A List of Selected Readings

  Some suggested references for users who want more information

- An Evaluation Form

  A vehicle that enables users to provide suggestions on improving the RSVP service

- Order Forms

  Order form including envelope addressed to IES for ordering other RSVP packages

The total package represents the Project's best efforts to provide users with a state-of-the-art of the literature and does not represent any one point of view or opinion.

Announcement of Services

Announcements of the availability of the service were effected through general mailings and selected mass media mechanisms. The responses generated were proof that interested potential users were willing to try, evaluate, and adopt this portion of the service. A more detailed description of the processes used to develop the Teacher Effectiveness, Open Education, and Educational Finance information packages is contained in Volume II, Section 7 of this report.

Yet to be implemented is the segment of the process that links potential consumers with producers of known successful practices. This stage will involve the creation of ad hoc task forces and collaboratives, brokering of successful practices, and support services such as in-service training.

In January and February 1974, IES hosted the first Information Utilization Workshop (see Volume II, Section 8) based on the contents of the two RSVP packages developed at that time: i.e., teacher effectiveness and Open Education. Participants invited included representatives of districts that had already adopted the service and representatives of districts which analysis showed should adopt the service. In addition everyone who had participated in the original User Design Labs, either directly or indirectly, was invited to one of the two workshops, again intensifying their awareness of and interest in the service.

The participants assembled represented the perspectives unique to different regions, "islands of culture," and different hierarchical levels and were at various stages of "readiness" for change. In forming task forces, the various participants learned about each other's perspectives in working through a simulated problem-solving experience designed to increase their effectiveness in utilizing information. The workshops concluded with a comprehensive evaluation which provided valuable guidelines for future development efforts (see Section 4 of this Volume and Volume II, Section 8).

BENEFITS OF THE RSVP SERVICE

The benefits that resulted from the implementation of the RSVP concept and process are highlighted below:

- The RSVP service increased the relevancy of, reduced the cost of, and made easier access to information of common, high-priority concerns shared by multiple publics of different perspectives across regions, as well as to information on existing successful practices.
- In implementing the concept, an "opinion leader" network credible to the practitioners was created. The network could be activated to intensify awareness and interest among the constituencies each leader represents.
- The service was designed by and for multiple-public users and evaluated by them. However, while the development of the service network was controlled by the user, it was at the same time capable of being more effectively governed by the Commonwealth because of the more credible feedback provided by the users.

- The sequence of user-involved product development process followed by intensified local workshops, formation of collaboratives, and use of the information provided to resolve actual crises or solve problems brought together for the first time multiple publics with different cultural backgrounds, disciplines, and perspectives who shared as a common interest the solution of a high-priority need and who had a common context which transcends those differences and increases the probability that the need could be resolved.
- At a later stage, the process will lead to the brokering in and adoption of successful practices, including the support services such as in-service training required to ensure successful adoption of the practice.
- As collaborative linkages evolve within and across regions and first-generation users more clearly perceive how to apply information in defining and solving problems, users should begin to place more value on obtaining additional information and be able to more clearly define their information requirements. This "consumer seek" and collaborative coalescence process should provide the basis for effective introduction of regionalized access to on-line, interactive, fourth-generation computer technology.

SECTION 5

OTHER INFORMATION SERVICES EVOLVED UNDER PROJECT SEIC

NATURE OF THE EVOLVING INFORMATION SERVICES

In addition to RSVP (see Section 4), Project SEIC evolved three types of information services: (1) Searches-In-Depth (SID) service; (2) a Comprehensive Information Services Program; and (3) the Management Information Services developed by the Massachusetts Department of Education's Division of Research, Planning and Evaluation. These services are described in this section.

SEARCHES-IN-DEPTH (SID)

SID is a personalized search service in which an information specialist works with users of the service to define their information needs in order to retrieve abstracts of the most appropriate materials (curricula, model programs, journal articles, research reports, conference proceedings, bibliographies, etc.) from an automated ERIC data base.

In November 1972, using the Project's computer-based search and retrieval system and operating on the ERIC data files, SID became fully operational.

Evolution of the SID Service

The evolution of the SID service paralleled the two major stages of the project: (1) the Initial Stage, 1971 to 1973, and (2) the Continuation Stage, 1973 to 1974. The activities of the Initial Stage produced a number of studies that formed the basis for a testbed system that was defined, implemented, evaluated, and evolved into a fully operational system that effectively served the educational community. Collaborative arrangements with the San Mateo Educational Resources Center (SMERC) during the Project's continuation stage produced improvements in the responsiveness of the SID service to the information needs of its users.

Establishing the Operational System

Prior to defining the requirements for the development of the SID service, the SEIC Project team performed a literature survey that established the state-of-the-art of (1) educational management information systems and computer application in education (see Section 3), (2) knowledge utilization and the dissemination of information, and (3) current theories and practices involving the linkage of local school systems to state departments of education. The results of the survey are contained in Volume II, Section 9.

The initial Project organization and planning activities resulted in the definition and acceptance of a two-phased approach to the development of the SID service. The first phase involved a series of studies that led to the development and operation of a testbed system on the MITRE computer. The purpose of the testbed was to operate and evaluate, over a 6-month period, a computer-based retrieval system for the project. The lessons learned from testbed operations were subsequently used to modify the configuration for the second phase of the approach that involved the operational system that began service in November 1972.

The technical efforts which led to the Project's operational capabilities were performed under the initial guidance of a New England-wide Advisory Committee. The committee held its first meeting in October 1971 at which a selected group of users and information specialists were oriented to the Project and its goals. In June 1972, a second and somewhat expanded SEIC advisory group met to review the technical developments of the project and identify the roles and self-interests of the existing service organization. This key meeting produced an integrated and balanced perspective among all concerned individuals and organizations that related to the project activities. It was an essential factor in clarifying and structuring (1) the governance role of the Massachusetts Department of Education and (2) the appropriate service roles for other organizations with specialized capabilities and missions.

In summary, at the close of the initial stage of the project in June 1973, the SID service had evolved, under the guidance of its Advisory Committees, from a testbed configuration of an operational system that had processed 270 search requests for Massachusetts educators.

Continuation Year Improvements

From the fall of 1973 through the spring of 1974 measures were taken to provide SID users with search packages that contained not only computer printouts of document abstracts and titles but also microfiche cards and photocopies of journal articles. Moreover, the information package often included "fugitive" data, i.e., data not captured in ERIC. This upgrading of the service had been a long range goal of the project that was accomplished through collaborative arrangements with the San Mateo Educational Resources Center (SMERC) under the directorship of Frank W. Mattas (see Section 3 of this report and Volume II, Section 10).

Finally, the introduction of the multimedia SID packages provided the opportunity to adjust the selling price of the service to not only reflect the upgrading of the service but also to put it on a more self-sustaining basis in a period of rising production and service delivery costs.

Description of SID Information Packages

A typical SID package consists of the following items:

- a transmittal letter on IES stationery that describes the content of the package and a brief message to the user from the individual who performed the search;
- a narrative that describes how to interpret the computer abstracts;
- computer printouts of up to 50 ERIC abstracts, the 10 best of which are included on xerox copy or microfiche;
- fugitive data;
- a photocopy of one or more journal articles;
- an order form that tells the user how to order ERIC documents, microfiche, and photocopies of journal articles; and
- an evaluation form that the user is requested to complete and return to the Institute for Educational Services.

The above items are assembled, packaged, and mailed to users of the service within the typical 2-week turnaround period. Volume II, Section 11, of the Project SEIC final report, illustrates the above items for a typical SID search.

COMPREHENSIVE INFORMATION SERVICES PROGRAM

A comprehensive Information Services Program is available to school systems and educational agencies on a subscription (block contract) basis through the Institute for Educational Services. In addition to Searches-In-Depth and RSVP services, the Comprehensive Program provides a wide range of useful publications including:

- monthly newsletters;
- annotated bibliographies and resource guides on such topics as Year Round Schools, Individualized Instruction, Behavioral Objectives, Effective Use of Paraprofessionals, Community Involvement in Educational Planning;
- UNIPACS — Over 5000 up-to-date, completely validated, individualized learning packages; and
- fugitive data catalogs which contain indexed materials of local, national, and international interest.

Through this service, school systems have access to equipment such as microfiche, microfiche readers, and a wide variety of support services such as workshops for faculty members, community groups, and school boards. Samples of the materials available under the program are contained in Volume II, Section 12.

MANAGEMENT INFORMATION SERVICES

The Massachusetts Department of Education, Division of Research, Planning and Evaluation, maintains and disseminates a variety of non-ERIC, management-oriented information including financial, pupil, program, staff, facilities, and test and evaluation. Stimulated by the SEIC Project objective of improving the responsiveness of MDE's non-ERIC data to local needs, MDE developed and implemented an enrollment projection model that indicated the extent of the effect of declining birth rates on public school enrollments and the extent to which expected transfers from non-public schools would offset the effect of the drop in births. The enrollment projection service is described in more detail in Volume II, Section 13. MDE has also prepared and disseminated historical revenue and expenditure data summary reports which include the identification of financial trends on an individual community basis.

SECTION 6

TOWARD SELF-SUSTAINING OPERATIONS

MARKETING

The hand-in-glove nature of the RSVP and SID services facilitated the joint marketing of the two services (see Volume II, Section 14). In addition, the RSVP service constituted an integral part of the information services that are available under subscriptions (the Comprehensive Information Services Program) negotiated by IES.

Four major efforts have been conducted to promote the information services: (1) mailings of letters and brochures, (2) journal articles and advertisements, (3) displays and presentations at educational conferences and workshops, and (4) direct personal contacts. Volume II, Section 14 contains the journal articles, brochures, letters, etc., that have been used in the marketing of the services. The following paragraphs comment on the major marketing efforts in each of the above categories.

As of August 1974 IES distributed over 10,000 pieces of literature, e.g., letters and brochures to local superintendents, supervisors and directors of elementary education, and curriculum specialists. An assessment of this method of promoting the service indicated that only minimal sales have resulted from the individual mailings; however, mailings on colored stock received a larger response than those on white paper. This small response produced a concentration of efforts on other marketing activities that centered more on personal contact with the prospective user of the service.

Through the efforts of the IES staff, the services have been promoted at approximately 20 different educational conferences, workshops and meetings of professional educators (See Volume II, Section 15). The promotional activities have ranged from distributing brochures to conference attendees to the presentation of papers and the management of a SEIC booth at major conferences. The success of these marketing activities is attributed primarily to the initial personal contact that is made with the prospective users and subsequent followup activities. The approach is only one step removed from the most effective (and most time consuming) marketing approach which involves direct contact with the prospective users in the setting of their own community/school system.

Direct personal contact, recontact, and reinforcement has been the most successful marketing approach used. The IES staff has made visits to over 50 local school systems to promote the SEIC-generated information services; many times return visits are scheduled.

Usually the director of IES makes an initial visit to the superintendent or key central office administrators (e.g., prinicpals, mixed administrative council) to explain the information service. Since most school systems have never used an information service and since the service involves generally unknown elements -- computer access, microfiche, etc. -- this personal contact is important in communicating the real value of the service and in dispelling the feeling of remoteness which so often characterizes a technological improvement. These visits have been well received.

Also the information specialists build their own clientele and frequently conduct workshops on request. Often this produces a grassroots effort when teachers and administrators press for acceptance of the service in their school systems.

Both the director and information specialists use a slide tape to present the services. This presentation is not meant to be completely self-explanatory, but is supplemented with charts and printed materials. The first slide tape contained too much information and, although created for a scholarly audience, was not very interesting. IES 's latest slide tape, featuring the concept that the viewers are there to help children, has been very well received.

Unfortunately the time consuming nature of these activities has prohibited their expansion. It would be desirable to employ a person on a full time basis for field marketing activities.

Several journal articles and advertisements have been published in the key educational publications in Massachusetts. They include the following:

- "Information Searches Offered to Educators," The Common Wealth, November 1972.
- "Educational Information at Your Service," The Common, June 1973.
- "Search and Rescue in Educational," MASC Journal, March 1973.
- "Need Information? Ask SEIC," The Massachusetts Teacher, March 1973.

- "Easy Access to Educational Information," Kaleidscope, Fall 1973.
- "Institute for Educational Services, Inc.," Kaleidoscope, Winter 1973.
- "I Am Still Learning," Kaleidoscope, Spring 1974.

The journal approach to marketing the services has proved to be moderately successful in that it has produced one-time, nonsustained peaks in the sales curves. User feedback on the articles has indicated that although topical and correct they are too scholarly or above the level of the average reader.

Initially the same criticism held true for IES's brochures. In an attempt to be complete they were confusing. They also left the reader in doubt as to whom to call for information. The revised brochure, however, has received wide accaptance for its content, design, and clarity.

Among IES's most successful marketing adjuncts have been the News Notes and Resource Guides published bimonthly (on alternate months) by SMERC. These publications acquaint the user with the latest materials, many of which are fugitive and therefore solely available from SMERC. Examples of these publications can be found in Volume II, Section 14.

SID SALES

From the inception of the SID service in November 1972 through August 1974, 715 search requests have been processed under the SEIC project. The monthly sales demand is shown in Figure 11.

The first major peak in the demand curve occurred in March 1973. This is attributed to the buildup in the marketing efforts that occurred at

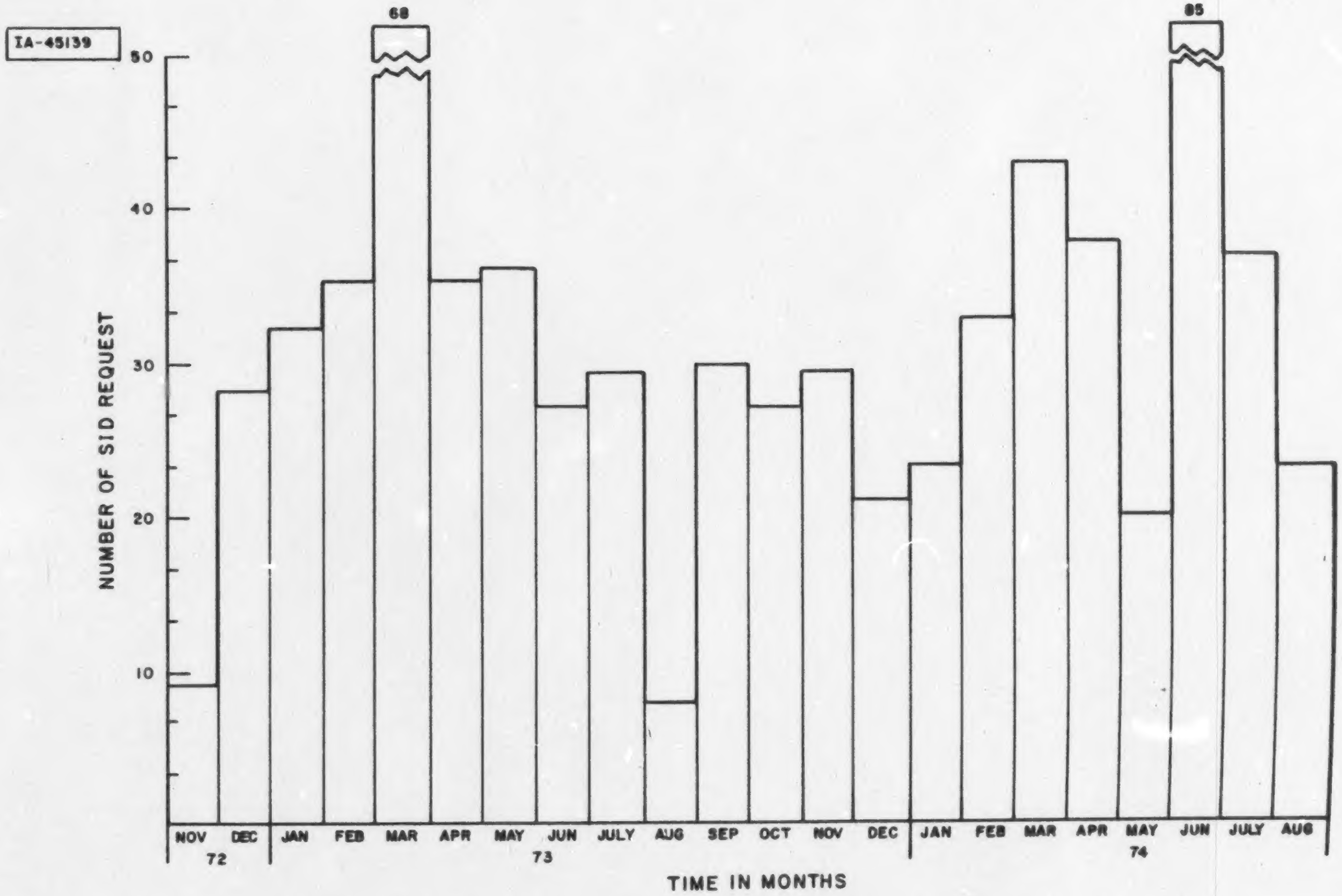

Figure 11. Monthly SID Sales: November 72 — August 74

that time. It involved three journal publications (The MASC Journal, The Massachusetts Teacher, and Kaleidoscope) and several direct personal contacts made by IES.

The second major peak in the demand curve occurred in June 1974. Two major factors accounted for this. First, several searches were performed for school personnel who were undertaking curriculum development activities during the summer months. Related to this is the second factor which involves the subscriptions that had been negotiated by that time.

The two major low demand months occurred in November 1972 and August 1973. The former was the month in which the service became operational and the latter reflects summer vacations that traditionally occur in the month of August.

DEMAND FOR SID SERVICES BY TARGET GROUPS

Users of the SID service can be classified into six categories as shown in Table III which also shows the percentage of SID requests that have been received from each group.

With respect to the first four categories shown in Table III, users have resided both within and outside state. More specifically, 87 percent of the requests came from Massachusetts school administrators, while 92 percent of the requests from the local school faculty, 94 percent of those from university administrators and faculty, and 99 percent of those from university students also were Massachusetts based.

The local school administrators and faculty represented 110 of the communities in the Commonwealth. Local school administrators from seven other states also used the service. Personnel (administrators, faculty,

TABLE III

Percent of SID Requests from Major User Groups

	Group	Percent of Total SID Requests (715 Total Requests)
1.	Local School Administrators	43
2.	Local School Faculty	11
3.	University Administrators and Faculty	13
4.	University Students	15
5.	Agencies	15
6.	Other	3

and students) from 13 colleges and universities within the state have used the service. Personnel from eight non-Massachusetts colleges and universities have also used the service. In addition members of 25 educationally oriented agencies and organizations have used the SID service.

RSVP SALES

From July 1973 through August 1974 a total of 151 requests for RSVP packages have been processed. Since each order typically requests several information packages, a total of 884 individual packages of information have been disseminated. The distribution of sales by months is shown in Figure 12. The first four months shown in Figure 12 reflect the initial sales of the Teacher Effectiveness packages. In November 1973 the Open Education package became operational. In addition the Kaleidoscope advertisement was published at that time. The net effect was the peak demand for service (38 requests were received and processed during the month). From December 1973 through June 1974 the demand for the RSVP

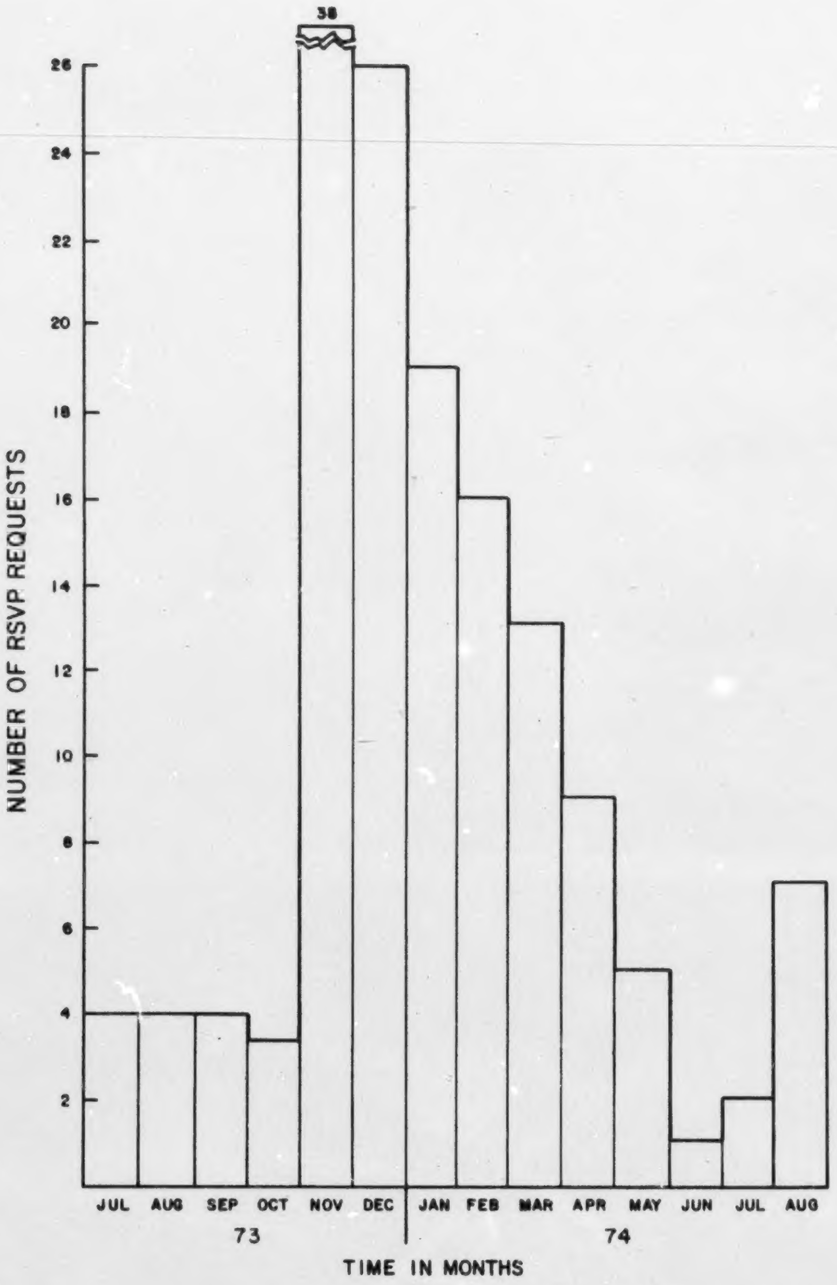

Figure 12. Monthly RSVP Sales: July 1973 — August 1974 (Open Education Plus Teacher Effectiveness Sales)

services declined steadily and began to increase slightly during July and August 1974, and has dropped markedly since then. The decline in RSVP sales should be assessed in light of several interrelated factors. First, there was the stretch-out nature of the development effort itself. A cutback in Continuation Year funding necessitated a sequential rather than simultaneous development effort; hence, the multiplier* effect was lost. Full implementation of the concept required conducting annual needs assessments, at least on a regional basis, and concurrently developing several new information packages and updating existing packages.

Second, the same cutback also curtailed implementation of the comprehensive marketing plan (see Volume II, Section 5) which included intensive effort in selected districts to refine the dissemination strategy. While the two Information Utilization Workshops held were both oversubscribed, additional workshops could not be scheduled because of other Project priorities, e.g., marketing efforts directed toward negotiation of subscriptions for the Comprehensive Information Services Program (block contracts) necessary for realization of a self-sustaining operations. IES staff time and energy were devoted to several months of effort in this area.

Third, while RSVP sales were declining, the number of SID sales was increasing, reaching a peak of 85 searches in June 1974 (see Figure 13). The limited IES staff, already involved in negotiating block contracts and

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*In essence, the multiplier effect is the degree of accelerated diffusion and utilization of the information contained in the package resulting from prior investment of developmental effort in such activities as establishing credible entry, involving the practitioner in a needs-assessment activity, building relationships, etc., so that when the product is disseminated it is credibly viewed as being needs-responsive and advocated by those practitioners involved in earlier needs assessments to fellow practitioners who respect their judgement.

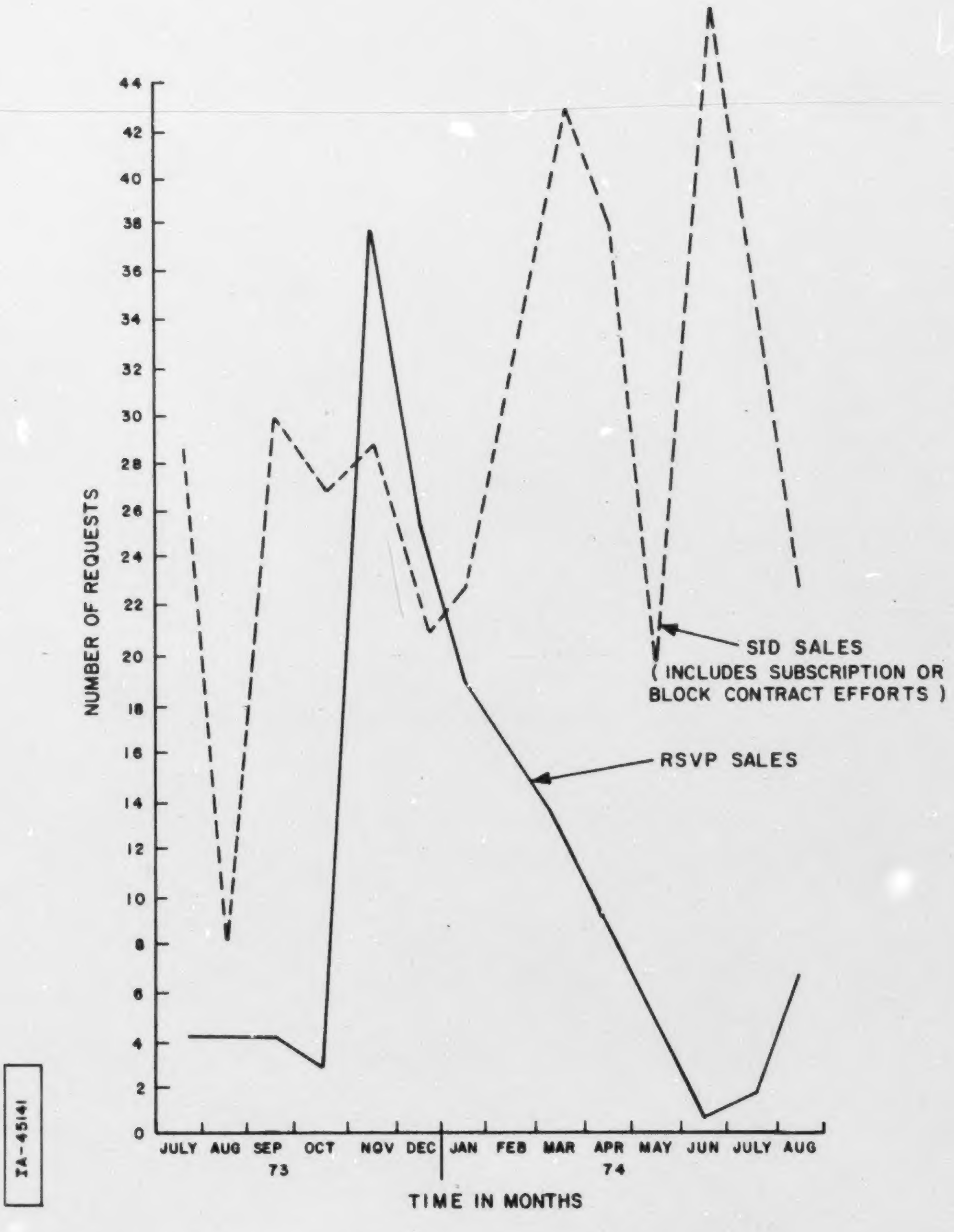

Figure 13. SID and RSVP Sales: July 1973 — August 1974

conducting workshops, also bore the responsibility for timely processing of the SID searches and had to abandon RSVP marketing efforts.

Fourth, it should be remembered that a major R&D objective of Project SEIC was to demonstrate the validity of the RSVP concept as opposed to generating sales volume. Evaluation of the concept (Section 7 and Volume II, Section 18) indicates that this objective was effectively achieved and that with sufficient staff for appropriate followup activities, the service would gain substantial acceptance statewide. This, in turn, should lead to an increased demand for SID searches, based on the user's increased appreciation of the value of information to the educational decision-making process and his improved ability to define his information needs more accurately.

As the current school year gets further underway, the RSVP sales curve is expected to continue the rise started in July. Administrators and teachers are expected to take advantage of the RSVP services that are available under the block contracts that have been negotiated to date.

DEMAND FOR RSVP SERVICES BY TARGET GROUPS

The users of the RSVP service can be classified into five categories as shown in Table IV. Table IV shows also the percent of RSVP requests that have been received from each group. The figures shown refer to Teacher Effectiveness and Open Education Products only. The Educational Finance Packages became available for distribution after August 1974 and hence are not included in the demand analysis.

Table IV

Percent of RSVP Requests from Major User Groups

	Group	Percent of Total RSVP Requests (151 Total Requests)
1.	Local School System Administrators	73
2.	Local School System Faculty	16
3.	University Administrators and Faculty	5
4.	University Students	3
5.	Educational Agencies	3

Users within the first four groups shown in Table IV resided both within and outside of the state. Of the local school administrators that used the service, 77 percent were from within the state. Similarly, 63 percent of the local school faculty members, 20 percent of the university administrators and faculty, and 33 percent of the university students that used the service were within the state.

The local school administrators and faculty represented 55 different communities within the Commonwealth. Local school administrators and faculty from nine other states plus Canada have used the RSVP service. Personnel (administrators, faculty, and students) from 12 Massachusetts colleges and universities and 4 non-Massachusetts colleges and universities have requested RSVP packages. Finally, members of four educationally oriented agencies and organizations have used the RSVP service.

The users' evaluation of both RSVP and SID services is the subject of the following section.

SECTION 7

USER EVALUATION OF THE SID AND RSVP INFORMATION SERVICES

USER EVALUATION OF THE SID SERVICES

User reaction to the SID services is obtained in one of two ways:

- through evaluation forms included in the information packages prepared for and disseminated to the user,
- through an annual assessment conducted by means of an evaluation form sent to all SID users ordering searches in the previous 12 months (see Volume II, Section 7), and
- the Practitioner Evaluation Board (being implemented).

Through August 1974, the return rate on questionnaires in the first category totaled approximately 25 percent; returns on the annual evaluation totaled approximately 70 percent. The difference in this rate of return is attributed to (1) increasing user appreciation of the service and (2) the design of the form.

Results of Individual SID Evaluations

The general results of an analysis of the individual questionnaires are summarized below.

- Ninety-four percent of the sample considered the search results to be either moderately or very useful (42 percent very useful; 52 percent moderately useful). Only three responses indicated that the search was "not very useful." The user comments on these three responses are presented below:

    a. The search was not useful except to let me know that nothing was available.

    b. The problem was not the fault of the service, but the apparent lack of data available to the system from the sources.

    c. I was interested in bilingual programs and received no such information.

- Ninety-eight percent of the sample considered the search delivery time to be faster than expected or as expected (52 percent faster than expected; 44 percent as expected). One response indicated that the search delivery time was slower than than expected. The user explanation was that there was difficulty "zeroing-in on the topic."
- Approximately 50 percent of the users plan to order documents while 30 percent do not plan to do so. Twenty percent of the returns did not report on this item.
- Forty-four percent of those ordering documents plan to order only hardcopy while 36 percent intend to order both hardcopy and microfiche.
- Fifty percent of those ordering documents plan to do so through ERIC Document Retrieval System (EDRS). The remainder plan to order through a variety of colleges, universities, collaboratives, and the Boston Public Library.
- Eighty-eight percent of the sample had access to a microfiche reader. Ten percent did not have access and two percent of the sample did not respond to the question.
- The locations at which the user would access the microfiche readers included a variety of colleges, universities, local school systems, collaboratives, and MDE Regional Offices.

The overall conclusion of the analysis was that the critical major deficiency impacting on the service is the limitation of the ERIC data base itself in regard to matching responses to practitioners' queries. This deficiency is being addressed through the inclusion of inputs from fugitive data bases. In general, it was found that the users rated the products as highly useful and the service exceptionally responsive in terms of delivery times.

Results of the Annual SID Evaluation

The results of the annual assessment tended to reinforce the findings of the analysis conducted of individual evaluation returns. Some generalizations regarding the service can be derived from both assessments. Specific comments from the annual assessment are included in Volume II, Section 8.

(1) several users commented on the value of personal time saved by relying on a SID search to provide information on a topic of interest;

(2) several users indicated that they would use the service again;

(3) most users felt that the personal attention provided by the IES staff was above average;

(4) the majority of users who voiced disappointment with the results of a search attributed their dissatisfaction not to the search strategy or the service but to the limitations of ERIC itself; and

(5) several users indicated that the search results would be of greater value if they included not only the abstracts but expanded summaries of the document as well.

USER REACTION TO RSVP SERVICES

User evaluation of the RSVP services is obtained in four ways:

- through evaluation forms included in each information package;
- through an annual assessment (see Volume II, Section 8);
- through evaluation forms completed during Information Utilization Workshops (see Volume II, Section 8); and
- through the Practitioner Evaluation Board (currently being implemented).

Returns on the forms provided with individual packages are extremely low (3 percent) and for purposes of analysis have been incorporated with the results of the annual assessment where the rate of return approached more than 50 percent. The most detailed responses were obtained at the conclusion of the Information Utilization Workshops conducted to demonstrate the utility of the Teacher Effectiveness and Open Education RSVP services (see Volume II, Section 8). Similar workshops on Educational Finance have yet to be conducted.

Results of the Individual and Annual Assessments

There appears to be a general consensus of the users' opinions of the service. A summary of the evaluation for both Teacher Effectiveness and Open Education appears below:

- The content of the packages were either what the user expected or better than the user's expectation.
- The specificity of the information was generally "just right," "useful," and "readily understandable."
- The number of abstracts were rated as "adequate" with the exception of one user who desired more abstracts.
- The users were able to "moderately" apply what was learned from the information contained in their packages.
- All suggested that future RSVP information packages be modeled after those that they received.
- All but one individual characterized the service as "a good buy for the money." The exception felt that it was overpriced.
- Two-thirds of the users paid for the service out of personal funds while one-third used local school funds.
- In some cases the visual quality of the reproduced or photocopied articles was poor.

Results of the Information Utilization Workshop Evaluations

The above findings were supported by a much larger audience that evaluated the RSVP services at the two Information Explosion Workshops that were conducted in January and February 1974. The results of the evaluations are summarized below and detailed in Volume II, Section 8.

Format of the Grid

Most participants at both Workshops indicated that the grid (indexes) helped them to better understand the total RSVP information service, and facilitated access to the selection of particular packages responsive to their questions on either Open Education or Teacher Effectiveness. A majority of users also found the instructions for ordering packages clearly stated.

Information Packages

Eighty-nine (89) percent of the Workshop participants indicated that the variety of information found in the Teacher Effectiveness packages was "about right"; 69 percent of those evaluating the Open Education packages gave them a similar rating. In terms of specific items, i.e., abstracts, articles and reading lists, Teacher Effectiveness packages also scored consistently higher (92 percent, 78 percent, and 86 percent versus 70 percent, 66 percent and 74 percent, respectively, for Open Education). It should be remembered, however, that prior to the introduction of the Teacher Effectiveness service, little information had been systematically organized and packaged on this subject. Conversely, information on Open Education has been in abundant supply for several years. Consequently, the simple fact that information on this highest ranked of all topics was available in some organized fashion for the first time may have impacted strongly on the user's evaluation of the Teacher Effectiveness RSVP service.

Most users indicated that the inclusion of microfiche would severly limit both the portability of the material and its utility at group meetings.

Costs

The majority of participants felt that the cost of the service was not overpriced for the local school district; several felt that parents, especially those in the economically disadvantaged group, would find a service they vitally needed too expensive. Some participants suggested that the state subsidize the service for such target groups.

Utility of the Information

Most participants indicated that both the Teacher Effectiveness and Open Education packages would be of extensive use to school board members, administrators, and teachers. They believed that parents would find them only moderately useful. Most participants also believed that the packages could be readily understood and, where appropriate, applicable to the decision-making process.

Utility of the RSVP Concept

Fifty percent of the participants indicated a highly positive reaction to the RSVP concept; 37 percent indicated they waivered somewhere between highly positive and undecided while 13 percent were clearly undecided. Most felt that additional Information Utilization Workshops were essential to the successful adoption of the process and expressed the hope that such follow-on programs were being planned.

General Conclusions

The responses to the evaluation forms were subsequently classified in terms of communities reflecting a low and high ability to change, based on equalized valuation of the property within the communities. It was determined that RSVP appeared to have greatest appeal in communities with lower equalized valuations indicating that perhaps the RSVP service is most welcomed by communities whose need for equalizing educational opportunities is most intense. Additional studies would have to be conducted to confirm or disavow this fact.

ANNUAL EVALUATION OF INFORMATION SERVICES

A more recent analysis of how statewide practitioners evaluate comprehensive information services including RSVP and SID is available in Volume III of this report. This analysis focuses on the degree to which practitioners use information for specific types of decisions: the value of RSVP and SID services for making these decisions. A more specific analysis by publics, e.g., teachers, administrators, and community is also examined against aggregate trends to enable the governance and linking agencies and the practitioner evaluation board to gain new insights into how to improve the service in response to greater understanding of single-public and community needs. The results of the statewide analysis will also be used by IES to refine and expand its marketing and diffusion strategy.

SECTION 8

THE CURRENT VALUE AND FUTURE PROMISE OF THE SEIC PROJECT TO MASSACHUSETTS STATE, REGIONAL, AND LOCAL EDUCATIONAL AGENCIES

Project SEIC invested in the belief that people, regardless of their positions in the community and for a variety of reasons, want to become more effectively involved in the educational decision-making process. The Project designers not only viewed the information services as one element of a planned change strategy, but that element on which the others crucially depend. The accelerating pace and substance of change as prescribed through pioneering legislation and mandates of the courts intensified the need to continue the expansion and refinement of the services.

In the near future, SEIC can intensify the impact of services and projects currently being delivered or underway at all levels of the Department: Central Headquarters, Regional Offices, and local levels. Some possible support areas are defined below.

MDE CENTRAL HEADQUARTERS

Within specific bureaus, e.g., the Bureau of Student Services, SEIC is of current interest because it can be expanded to provide students with timely and relevant information as they plan their career paths.[*] As the students determine their interests and identify needed, relevant educational experiences, mismatches in the current curriculum, and student requirements.

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[*] A "spillover" benefit of this application is its ability to address occupational competencies.

will surface. Student Advisory Council members can use this information to facilitate change as they work with their school committees.

Evaluators of, for example, Title I proposals can ask SEIC to search its comprehensive data bases to assure that limited funds are not allocated to projects that, in fact, will "reinvent the wheel." Moreover, the strategies developed in conjunction with the Users' Design Lab can be employed by educational planners to identify common, high-priority needs. SEIC's data bases can then be searched to identify whether or not these needs have been identified and successfully addressed elsewhere. The outcome of this effort will ensure that grant requests developed for federal dollars will more precisely define the problem and its proposed solution.

REGIONAL CENTERS

A current, in-house project focuses on improving the management ability of Regional Center staff. Improved process skills imply a growing use of information to assist in defining problems and building solutions. SEIC can fill a substantial need in this area.

More fundamentally, since a major priority of the Department is to strengthen its Regional Centers, and since Regional Offices nationally tend to focus on three major services—vocational education, special education, and information services, SEIC offers a quick way for such agencies to become more service oriented. Because the strategy applied in developing relevant services is founded on a "consumer-seek" philosophy, the pitfalls of the "producer-push" approach characteristic of current Title III dissemination and diffusion efforts are avoided. The three Resource Guides related to Chaper 766* which were developed by IES and disseminated through the

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*Massachusetts legislation which prescribes a new, comprehensive approach to the delivery of Special Education services.

Regional Centers, serve as examples of relevant and timely information services responsive to consumer needs.

LOCAL EDUCATIONAL AGENCIES

As the results of the state's current assessment program are published, LEAs (Local Education Agencies) will become increasingly aware of program needs. SEIC offers quick access to information that may contain feasible solutions to some of these needs. Moreover, as legislative actions, e.g., Chapters 766, 847,* etc., and mandates from the courts continue to be handed down, local managers will be increasingly pressured to make and support decisions that operationalize the intent of the law. The value of SEIC is embedded in its ability to help the state even further this year in implementing Chapter 766, e.g., by developing and diffusing specialized services, including workshops, resource guides, and carefully tailored packages to a variety of publics. A refined and updated version of the Teacher Effectiveness service can provide direction and focus to the debates that are sure to surround the implementation of the Teacher Certification law.

TOWARD A COLLABORATIVELY MANAGED INFORMATION SERVICE GOVERNED BY REGIONAL AND LOCAL EDUCATIONAL AGENCIES

As efforts to equalize educational opportunity and deliver improved services intensify, they will be increasingly constrained by scarce resources. Educational decision makers will become increasingly reliant, out of growing need, upon accurate and timely information delivered in a variety of formats on diverse matters: e.g., budgets, programs, successful practices, etc. Moreover, they will want a voice in managing their information system in order to assure quality, responsiveness, and control. SEIC can be expanded to satisfy both needs—information and management—using existing models such as Minnesota's collaboratively managed TIES (Total Information Educational System) as building blocks.

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* Teacher Certification legislation

An immediate next step would appear to be the preparation of a comprehensive 5-year evolutionary development plan for comprehensive information services at the state, regional, and local levels. The plan first might focus on, for example, the alleviation of the Chapter 766 paperwork, resource management, and cost control problems by including as an objective the pilot test of a regionally governed record management system sensitive to issues of confidentiality and privacy. A generalized design approach would be used so that the system could be linked during subsequent developmental stages to status reports of service plans and their costs, information that would enrich the value of the management reports issued by the regional management information system.

The design approach would focus on providing LEAs with incentives to submit accurate transactional data (student records, service plans, etc.) to a prototype regional management information system for a developmental period. Such incentives could take the form of highly valuable management reports (e.g., cost effectiveness of programs, problem analysis) to local districts.

The transactional data would provide a sound basis for analysis useful to the six regional Educational Centers, e.g., produce reports reflecting aggregations of LEA problems which then could be analyzed to identify common, high-priority regional needs and provide a basis for financial and regional staff planning. This system also would provide, as "spin-offs," accurate reports to MDE which, in turn, would provide an accurate basis for reimbursing local districts for, say, the costs of special education.

The goal would be to develop a system that assists in building local problem-solving capacity to define and solve problems through more effective dissemination and utilization of information.

SECTION 9

CONCLUSIONS AND RECOMMENDATIONS

A 3-year developmental effort has been successfully completed, resulting in the following outcomes:

1. The operation of a statewide information service which has proven valuable to a number of LEAs and selected personnel within MDE Central Headquarters and its Regional Centers. Systems and management insights (see Figure 2, Management Plan, and Figure 3, Overview of RSVP Process) have supplemented the basic understanding of the diffusion process originally observed by psychologists and sociologists. These insights have facilitated the use of the computer to lower the cost of delivering the service and have made it possible for the governance and linking agencies to obtain fine-grained community and target-group profile data. This, in turn, is stimulating greater understanding of needs and is leading to more systematic management of a more coherent dissemination diffusion process.

   It is recommended that the use of this service be extended to support programs and staff throughout MDE and its Regional Centers, and that a systematic marketing campaign be mounted to increase awareness of this service across all LEAs. (See Section 8 for specific recommendations regarding expansion of this service.)

2. As an element of this service, a practitioner-oriented information service has been developed (RSVP) to assist first-generation information users to more easily access responsive, low-cost information which they both define and evaluate. The availability of this service encourages practitioners with common concerns to become informed on topics of current interest to them and to seek from available successful practices those which meet their more substantively and clearly understood needs. This information dissemination and innovation diffusion process contrasts sharply with top-down, producer-push diffusion strategies which tend to "broadcast" available "successful practices" and knowledge banks whether or not they are responsive to user needs. Such strategies overlook critical elements of the consumer-seek process which builds local problem-solving capacity.

Through participation in this process, the Regional Centers will move toward becoming regional brokers of services responsive to the needs identified.

It is recommended that an annual needs assessment such as that employed during the User Design Labs be institutionalized through the six Massachusetts Regional Centers and that a number of career education and special education RSVP packages be concurrently developed to (a) provide, over the short range, regional delivery of responsive information services and (b) build local problem-solving capacity with a context and capability for selecting and adopting available special education and career education practices consistent with state and local priorities.

3. As the above service evolves, a solid foundation will have been laid for the pilot test and implementation of a more extensive regional management information system which will further assist state, regional, and local agencies resolve paperwork and resource management problems (see Section 8).

   It is recommended that MDE organize immediately to prepare short- and long-range evolutionary development plans that capitalize on current development efforts and more substantively respond to current MDE priorities and legislative mandates.

4. Significant progress has been made over the past three years in the conceptualization, development, and implementation of a unique information dissemination and innovation diffusion process which will be attractive to other states as a national model.

   It is recommended that NIE examine the model described in the report for its potential ability to (a) supplement its existing process for identifying research priorities; (b) shape and develop high-priority knowledge banks responsive to practitioner needs, and (c) strengthen research, development, dissemination, and diffusion linkages in education Nationally—especially between (1) the practitioner and researcher, (2) the LEA and SEA, (3) the SEA and NIE, and (4) NIE and Congress. Since this model involves practitioner-oriented needs assessments grounded in the RSVP process (see Section 4), it provides a systematic approach, based on user-involvement, to the identification of gaps in the literature and thereby assists in determining research priorities, thus providing a valid basis for successful political support from local and state educational agencies—a fact that should assist NIE considerably in acquiring funding from Congress.

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GLOSSARY

adoption	-	acceptance of an innovation by a person, group, or organization
batch	-	a group of records or documents considered as a single unit for processing purposes
change agent	-	a professional who attempts to influence adoption decisions in a direction that he feels is desirable
diffusion process	-	the spread of a newly developed product, process, or practice to users. The diffusion process consists of six stages 1. awareness - the stage in which the individual, group, or organization is exposed to an innovation but lacks information about it 2. interest - the stage in which the individual, group, or organization becomes interested in an innovation and seeks additional information about it 3. evaluation* - the stage in which the innovation is mentally applied to present and anticipated future situations 4. trial - the stage in which the innovation is tested on a small scale for a probationary period 5. adoption - the stage in which an innovation is accepted 6. implementation - the final stage in which the innovation is fully and correctly used. Implementation also means accounting for other parts of the system which must be modified because of the innovation.

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*Evaluation also occurs after actual usage of the product, process, or practice.

fugitive information	- data not contained in the ERIC data base
gatekeeper (opinion leader)	- a person who controls specific types of information or is credible to certain constituents (see change agent)
grid	- an index or table of contents for each RSVP topic
hot topics	- subjects of pressing urgency to various user groups
innovation	- an idea perceived as new
linker	- a field agent (see change agent)
multiple public	- two or more single publics whose function as a task force can be facilitated by access to relevant information
off-line	- description of a computer system including peripheral equipment or devices in which the operation of peripheral equipment is not under control of the central processing unit. Human intervention is required between data entry and ultimate processing.
on-line	- description of a computer system in which the operation of terminals, files, and other auxiliary equipment is under direct and absolute control of the central processor to eliminate the need for human intervention at any stage between initial input and computer output
single public	- a group of people who are identifiable as a group because of a specific role (see multiple public)
task force	- a temporary organizational arrangement that brings multiple publics together to solve a specific problem

ACRONYMS

AIM - Abstracts of Instructional Materials
ARM - Abstracts of Research Materials
BEIS - Bureau of Educational Information Services
BOCES - Board of Cooperative Educational Sources
CEDIS - Career Education Information Service
CIJE - Current Index to Journals in Education
ED - ERIC Documents
EDCO - Educational Collaborative for Greater Boston
EJ - Journal Articles
EDP - Electronic Data Processing
EDRS - ERIC Document Retrieval System
EIC - Educational Information Consultant
ERIC - Education Resources Information Center
FIDO - Fugitive Information Data Organizer
HEW - Bureau of Health, Education and Welfare
IES - Institute for Educational Services
IGE - Individually Guided Education
LEA - Local Education Agency
LINKER - Local Information Network of Knowledge for Educational Renewal
MDE - Massachusetts Department of Education
MEC - Merrimack Education Center
MIS - Management Information Services
NCEC - National Center for Educational Communication
NIE - National Institute of Education

NEPTE - New England Program for Teacher Education
NERC - New England Regional Center
NERCO - New England Council on Occupational Education
NESDEC - New England School Development Council
NET - Network of Innovative Schools
OS - Operating System
PPBS - Program Planning and Budgeting System
QRP - Quick Response Package
RIE - Research in Education
RSVP - Responsive Services for a Variety of Practitioners
SEA - State Education Agency
SEIC - State Educational Information Center
SID - Searches in Depth
SMERC - San Mateo Educational Resource Center
TIES - Total Information Educational Systems (Minnesota School District)
TIP - Target Information Profiles
TSO - Time Sharing Option
USOE - U.S. Office of Education

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